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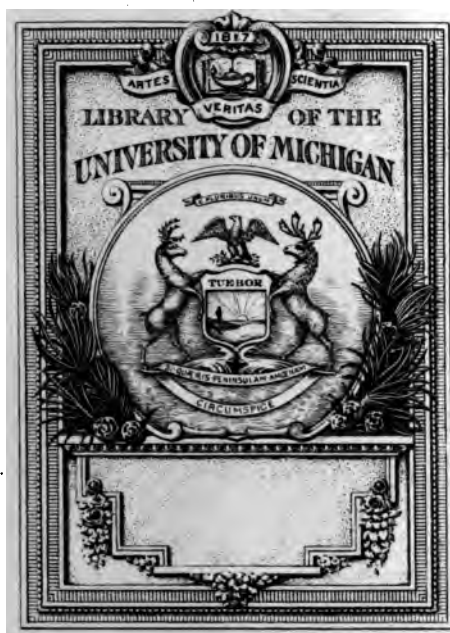
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BITTER BITTER CRY

OF

OUTCAST INVENTORS.

BY

THOMAS WAGHORN.



*"The Lord of hosts looked for judgment, but behold oppression;
or righteousness, but behold a cry."—Isaiah v. 7.*

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THE BITTER BITTER CRY OF OUTCAST INVENTORS.

As the wronged and persecuted inventor of a new process which I believe to be very useful to mankind, I have a right to cry out against the fiendish injustice displayed towards inventors, which is now, and which always has been, a characteristic of human conduct. God punishes mankind for this injustice, with retribution which makes the ears of all who hear to tingle. God has not abdicated the government of this world. He is still, as He has always been, the One who pleads the cause of the oppressed, and who executes vengeance on the unjust. And if what I now write should only lead men to make an effort to be kind to inventors, the Almighty, who is very merciful, and who bestows a liberal reward on even feeble and faulty efforts to do what is right, would almost certainly abate some of the punishments with which those who oppress inventors are at the present time afflicted.

I shall further on describe the invention for which I have been persecuted. But first, as I am only one of a large number of persecuted inventors, I shall dwell briefly on the cruelty of mankind in general to that deserving class of human benefactors.

Poets have dwelt on such a lamentable fact.

“ See nations slowly wise and meanly just,
To buried merit raise the tardy bust.”

Another poet, speaking of the celebrated Butler, says :

“ While Butler, needy wretch, was still alive,
No generous patron would a dinner give ;
See him when starv'd to death, and turned to dust,
Presented with a monumental bust.
Th' inventor's fate is here in emblem shown :
He ask'd for bread and he received a stone.”

There is not the shadow of a doubt that God punishes the nation of England with just severity for its heartless

and insane cruelty to its inventors. How many of the sources of poverty which now impoverish England would disappear, as if by enchantment, if inventors were only allowed to reap in peace the rewards of their mental industry! The history of the present day teems with facts which ought to make Englishmen blush. The injustice done to Waghorn is so recent that I need not describe it. And similar facts are so numerous that the difficulty of the task before me consists in making a selection which will not render its perusal monotonous.

That exceedingly useful series of books entitled "The Year Book of Facts," by the well known author, John Timbs, F.S.A., contains in the volume for 1864 an obituary notice of two ill-used inventors. "Henry Archer died in 1864. He was the inventor of the machine for perforating postage label stamps; for this invention Mr. Archer is understood to have received from the Government £4,000. The circumstances of the arrangement are detailed in a pamphlet published by Mr. Archer some years since, in which he considered himself an ill-used man."

There is not the slightest doubt that Mr. Archer was perfectly justified in considering himself an ill-used man. For the *smallest* just value of his invention was almost certainly £100,000, and if Government had been generous enough to give him the *largest* just value of his invention, he would have received about £200,000. Instead of giving him that sum the Government gave him only £4,000. If a purchaser were to go into a grocer's shop and to ask for a quantity of sugar, haggling with the grocer, and offering to pay only a fortieth part of the real price for it, he would act exactly in the same way that the Government acted to poor Archer. No wonder that he published a pamphlet declaring that he was an ill-used man. Now God judges for these things. There are ten thousand miseries from which inventors alone seem capable of delivering mankind. And the Almighty is perfectly justified in compelling men to reap what they sow, by permitting them to continue to suffer from the evils, from which inventors would gladly deliver their fellow-creatures, if these fellow-creatures did not torture, torment, and crucify them by cruel and tantalizing patent laws, and many other modes of bad treatment.

In Archer's case, however, the Government gave at least some reward, however inadequate. For giving some reward it deserves some praise. It behaved in so doing

a thousand times better than did those cruel and unprincipled men, who are responsible for the miseries inflicted on poor Samuel Baldwyn Rogers, as briefly described in Timbs's splendid "Year Book of Facts" for 1864, page 282 :—

"Samuel Baldwyn Rogers, formerly of Nant-y-Glo, died in 1864. His age exceeded ninety years, and although, by an improvement relating to the manufacture of iron, he largely contributed to the wealth of others, *yet he died in the deepest poverty himself.* He expressed an earnest wish that he might not be buried in a pauper's grave, and his brother Freemasons have responded to that wish. He was formerly employed at large iron-works in South Wales, *and committed the indiscretion of publishing 'An Elementary Treatise on Iron Metallurgy.'* *He was dismissed from his situation.* The improvement which he introduced was that of iron bottoms for puddling furnaces, and it is one of great practical importance. It was never patented, nor did he, I believe, ever receive for it any substantial reward. It is true that iron bottoms for certain furnaces had been previously suggested, but to Rogers is unquestionably due the merit of having first rendered their application practicable for puddling furnaces. When he proposed them he was laughed at by some iron-masters of experience, yet they are now universally adopted. When the distressed condition of the poor old man became known—a condition not resulting from misconduct on his part—several persons connected with the iron trade assisted him with money, but assistance came too late. This sad story—another instance of the unhappy fate of inventors who, in enriching others, have impoverished themselves—appeared in the *Times* a few days after Mr. Rogers's death."

Now it is a very striking fact that since the year of Rogers's death the iron trade of South Wales has been steadily declining. Iron furnaces have been blown out; ironstone pits have ceased to be worked, and terrible depression has settled down on the South Wales iron trade. This may or may not be retribution; God only knows that. But that God shall punish such inhuman cruelty with chastisements which will make the ears of men to tingle is as certain as that the earth revolved round its axis yesterday.

It positively seems as if men were becoming more cruel and heartless in some respects than they used to be. And if this is so, it must be due to the very godless and defec-

tive education which is now almost universal, and which, as the great historian Alison too truly declared, is capable of producing nothing but educated devils.

"We should steadily contemplate man as he is—variously compounded of great and noble, and base and vicious inclinations; the former requiring constant care for their development, the latter springing up unbidden in the human breast. Education, *if unaccompanied with sedulous moral training*, only aggravates the evil; it puts weapons into the hands of the wicked; *it renders men able and accomplished devils*. Wise statesmen must acknowledge with humility that it is by the spread of religious instruction and the extension of virtuous habits that the reform of the human heart is to be effected." (Alison's History of Europe, vol. xiv., page 56).

These powerful words of the celebrated historian tally remarkably with a well-known saying of the great Whitfield. "Man," said Whitfield, "is half beast and half devil, only we must beg the beast's pardon, for a beast never becomes half so vile as man does, when left fully to develop his bad propensities."

A terrible denunciation of the sin of withholding the expected hire of the labourer is found in the Epistle of James. The English nation, which is at present the richest nation on earth, and rich Englishmen especially, would do well to ponder the following words: "Go to now, ye rich men, weep and howl for your miseries that shall come upon you. Your riches are corrupted, and your garments are moth-eaten. Your gold and silver is cankered; and the rust of them shall be a witness against you, and shall eat your flesh as it were fire. Ye have heaped treasure together for the last days. Behold, the hire of the labourers who have reaped down your fields, which is of you kept back by fraud, crieth; and the cries of them which have reaped are entered into the ears of the Lord of Sabaoth. Ye have lived in pleasure on the earth, and been wanton; ye have nourished your hearts as in a day of slaughter. Ye have condemned and killed the just; and he doth not resist you. Be patient therefore, brethren, unto the coming of the Lord. Behold, the husbandman waiteth for the precious fruit of the earth, and hath long patience for it, until he receive the early and latter rain. Be ye also patient; stablish your hearts; for the coming of the Lord draweth near." Man's duty is succinctly described in the words, "Thou shalt love the Lord thy God with all thy heart, and

with all thy soul, and with all thy strength, and with all thy mind, and thou shalt love thy neighbour as thyself." If the cruel men who neglected Samuel Baldwyn Rogers had made the faintest attempt to discharge their duty, the scientific historian would have been spared the humiliation of recording the fact, so disgraceful to England: "Samuel Baldwyn Rogers died at the age of ninety, and although, by an improvement relating to the manufacture of iron, he largely contributed to the wealth of others, yet he died in the deepest poverty himself. He expressed an earnest wish that he might not be buried in a pauper's grave, and his brother Freemasons have responded to that wish." There are thousands of sermons preached in England every week on Christianity, the fundamental doctrine of which is that God felt such compassion towards ruined man that He actually gave up His only Son Jesus Christ to die as an atonement for human guilt; and that He has made the condition of individual salvation so easy that it is instantly secured by the greatest sinner, through means of one single act of faith in the atonement made by Christ on Calvary's cross. But, surely, Christianity cannot have penetrated to South Wales, else Timbs would never have said that "Samuel Baldwyn Rogers was formerly employed at large iron-works in South Wales, and committed the indiscretion of publishing 'An Elementary Treatise on Iron Metallurgy,' for which he was dismissed from his situation."

Depression and failure, failure and depression, are the characteristics of every trade and business in England at present. Agriculture, shipping, Parliamentary business, banking, and trade in general, are as depressed as they can well be. And why is this? It is because the rich oppress the poor. It is because the rich refuse to give enough to the poor. How can there ever be a market for the purchase of iron and other goods, if the number of the poor increases perpetually?

The perfect, and the only remedy for that deluge of poverty, which threatens to drown England, consists in every Englishman giving a portion of his income regularly, systematically, wisely and unostentatiously, to those who are poorer than himself. "*There is that scattereth and yet increaseth, and there is that withholdeth more than is meet, but it tendeth to poverty.*" Giving to the poor tends to enrich, not to impoverish the donor. "Honour the Lord with thy substance, and with the first-fruits of all thine increase, so shall thy barns be filled with plenty, and thy

fruit-bins shall be pressed down with a great abundance of ripe grapes." God has so constituted society that the rich must feed the poor, just as the hands must feed the mouth. The hands never refuse to feed the mouth, so the rich ought never to refuse to supply the wants of the poor. The hands never say to the mouth, "We work and toil and slave only to fill you, the mouth, which neither toils nor works. This must cease. We shall henceforth ourselves enjoy the fruits of our own labour." And the rich ought not to entertain such views regarding the poor. But they often do act as insanely as the hands would do if, refusing to feed the lazy mouth, they smeared themselves over with the food they had cooked, resolving selfishly to keep to themselves the fruits of their labour.

If there were any poverty caused to the rich by their gifts to the poor, one should not wonder at the slowness of the rich in giving to the poor, but when the whole of Scripture and the whole of history unite in declaring that giving to the poor enriches the donor, while withholding from the poor impoverishes the withholder, words can hardly be found sufficiently strong to condemn the stinginess of the rich classes among Europeans towards the poor. The Jews were commanded in the Mosaic law to give three-tenths, or about one-third, of their incomes to the poor and to the Tabernacle service. Christians who have had a far more glorious revelation of God's love might be expected to give more. But how few, how very few, give even a tenth of their incomes to the poor!

"Would'st thou be poor, scatter to the rich, and reap the tares of ingratitude ;

Would'st thou be rich, give unto the poor ; thou shalt have thine own with usury.

For the secret hand of Providence prospereth the charitable always ;

Good luck shall he have in his pursuits, and his heart shall be glad within him.

Yet perchance, he never shall perceive, that even as to earthly gains,

The cause of his weal, as of his woe, hath been small givings to the poor."

The above are the words of a great English poet.

"Give, and it shall be given you ; good measure, pressed down, and shaken together, and running over, shall men give into your bosom. For with the same measure that ye mete withal, it shall be measured to you again." "He that

giveth to the poor lendeth to the Lord, and what he had given shall be repaid him again." "He that giveth to the rich shall surely come to want; he that giveth to the poor shall not lack. Thou shalt surely give unto the poor, and thine heart shall not be grieved when thou givest unto him: because that for this thing the Lord thy God shall bless thee in all thy works, and in all that thou puttest thine hand unto. For the poor shall never cease out of the land: therefore I command thee, saying, Thou shalt open thine hand wide unto thy brother, to thy poor, and to thy needy in thy land." These are the words of the Almighty. And if men are not blessed in all their works and in all that they put their hands unto, if every branch of their business suffers from depression, we are justified in concluding that it is a punishment for their neglect of the poor. Spurgeon says on this point, "Our God has a method in providence, by which He can succeed our endeavours beyond our expectation, or can defeat our plans to our confusion and dismay; by a turn of His hand He can steer our vessel in a profitable channel, or run it aground in poverty and bankruptcy. It is the teaching of Scripture that the Lord enriches the liberal, and leaves the miserly to find out that withholding tendeth to poverty. In a very wide sphere of observation, I have noticed that the most generous Christians of my acquaintance have been always the most happy, and almost invariably the most prosperous. I have seen the liberal giver rise to wealth of which he never dreamed; and I have as often seen the mean ungenerous churl descend to poverty by the very parsimony by which he thought to rise."

Certainly it is not to be wondered at if such cruelty as that from which poor Samuel Baldwyn Rogers suffered should have caused *ungenerous churls to descend to poverty*.

But it is not only poor inventors of low social rank like Rogers who suffer from the heartlessness of the present cruel age. Men of very high rank are made its victims, as the following quotations from Timbs's valuable "Year Book" will show. "Sir Charles Barry, R.A., the architect of the new Houses of Parliament, died in 1861. His own preferences and tastes would have led him to adopt the Italian style of architecture for the New Palace of Westminster; but as the instructions to the competitors limited the choice of styles to Gothic or Elizabethan, he chose the former as the more suitable for such a building. From the moment he commenced his arduous undertaking until the

time of his death, a period extending over more than twenty-four years, this work occupied his thoughts night and day. The manner in which his professional services were requited by 'a Government proverbially indifferent to the claims of art' is a disgrace to the country, which the bare honour of knighthood can ill conceal. We sympathise in reading history with the ill-treatment of Sir Christopher Wren, and the cabal and controversy by which he was assailed ; but in the present day we have an equally glaring instance of meanness and injustice to merits of the highest order. Sir Charles Barry was elected a Royal Academician in 1842 ; he was also a Fellow of the Royal Institute of British Architects, a Fellow of the Royal Society, a Member of the Royal Commission for the Exhibition of 1851, and a member of many foreign academies, including those of Rome, Belgium, Prussia, Russia, Denmark, and Sweden."

"Thomas, Earl of Dundonald, died in 1861. He was 'a renowned sailor, warrior, and an ambitious inventor.' Since his retirement from naval service he had studied the science of naval warfare, and invented new projectiles, and new methods of blowing up ships ; and published many valuable hints for the improvement of our steam navy. These will be found developed in the autobiography of the Earl of Dundonald, which he just lived to complete. The fitful fever of his political life, and the coldness with which his bravery was acknowledged by an ungrateful country, or rather persecuting administration, are not our specialities. His merits as a scientific inventor were variously estimated. The editor of the *Mechanics' Magazine*, in announcing his death, remarks : 'Only last week we made mention of him in terms which we do not wish to recall, but with less tenderness than we now feel in thinking of the grand old man who is no more. Thousands of inventors have outshone him ; but no braver man or greater sailor ever lived, even in England. As to his bravery and its insufficient rewards, there can be but one opinion. He was honoured with burial in Westminster Abbey ; but, to quote a homely proverb, to be treated with respect after death is but a poor recompense for being neglected while living.'"

These are only a few illustrations of cruelty to inventors. And all such cases of known cruelty are only a tithe of the unknown cases. In the light of such cruelty, is it to be wondered at that trade is dull ? The Almighty hurls a specific woe at those who use their neighbour's service without wages : "Woe unto him that buildeth his house

by unrighteousness, and his chambers by wrong ; *that useth his neighbour's service without wages, and giveth him not for his work* ; that saith, I will build me a wide house and large chambers, and cutteth him out windows ; and it is cieled with cedar, and painted with vermilion ! Shalt thou reign because thou closest thyself in cedar ? *Did not thy father eat and drink, and do judgment and justice, and then it was well with him ? He judged the cause of the poor and needy ; then it was well with him :* was not this to know me ? saith the Lord. But thine eyes and thine heart are not but for thy covetousness, and for to shed innocent blood, and for oppression, and for violence, to do it. Therefore thus saith the Lord concerning Jehoiakim, the son of Josiah king of Judah, They shall not lament for him, saying, Ah my brother ! or, Ah sister ! they shall not lament for him, saying, Ah lord ! or, Ah his glory ! He shall be buried with the burial of an ass, drawn and cast forth beyond the gates of Jerusalem" (Jeremiah xxii. 13—19).

Now, the chief cruelty perpetrated by society on inventors, consists in using their "*services without wages.*" For this reason the predicted woe smites the oppressor. There are at present, on all hands, abundant signs of the presence of that woe. The *Fortnightly Review* for May, 1884, for instance, in noticing the continued depression of trade, says : "It would be stale and monotonous to try to print the despair of stock markets, the gloom of bankers, or the hopelessness of dealers in produce. The one question at present is, When will trade revive ? It is a question no one can answer. The horizon is clouded, and it is impossible to say when the clouds will break. India, too, is giving cause for anxiety, but we must leave its financial straits till another opportunity, merely noting that in Bombay and Calcutta the current rate of interest is 11 per cent."

I am not singular in holding that inventors have been shamefully treated. Many others, better qualified than myself to give an opinion on such a subject, have spoken with no uncertain sound of the injustice done in Britain to those who have been the first to bless the country with original and novel ideas. The following quotation from the *Practical Magazine*, headed, "The Growth of some Great Practical Ideas," proves this most conclusively :— "In an interesting appendix to their first annual report, the directors of the Positive Government Security Life

Assurance Company have drawn together some memoranda concerning the great improvements of modern times, *particularly as regards the prejudice and opposition which they at first encountered.* Their object in doing so is to encourage the supporters of the Positive in their efforts to popularise the distinctive character of that office. It is not, they assert, an imitative institution, established for the purpose of adding one more life office to those previously existing, but it is, to all intents and purposes, the first of its kind, and gives a new and improved character to practical life assurance and its administration. The greater part of the appendix we [the *Practical Magazine*] transfer to our pages. It bears evidence of careful compilation, and is worth preservation as a curious and suggestive retrospect :—

“ We look around us, and, in practical life, as well as scientific annals, perceive that numerous useful objects have been attained, and designs accomplished, which not only the ignorant and prejudiced, but even wise and disinterested persons have pronounced to be either impossible of execution or baneful to the public weal if accomplished.

“ Let us glance at a few of these.

“ In physiology, how many ages elapsed before the true doctrine of the circulation of the blood was expounded to the world. It was not until the year 1628 that Dr. William Harvey published the account of his immortal discovery. And how was it received by the learned physicians of his time? This greatest and most original discovery in physiology that had ever been made was scouted by them, and its author loaded with calumny and vituperation. He himself foresaw that this would be the case, and in the preface to his memorable work stated that he regarded it as only a necessary consequence of his setting forth a theory so adverse to all preconceived opinions. He feared that it would not only rouse the enmity of his professional brethren, but, through that, make all mankind his foes—so much are people wedded to the traditions of antiquity. There was some exaggeration in this, but in point of fact, his practice fell off considerably immediately after the publication of his treatise. There was not a physician above forty years of age that recognised the truth of his doctrine, and it was bitterly and violently opposed both in writing and speech by the leading physiologists of his time at home and abroad. He had the good fortune,

however, to outlive all this, and to see his theory finally accepted by the entire world.

"Similarly, the now famous Dr. Jenner, the discoverer of vaccination as a prophylactic against the small-pox, was only ridiculed and calumniated when he first propounded his theory. He communicated it to Hunter, to Clive, and other well-known heads of the medical faculty, but from none of them did he receive assistance or encouragement. Even upon the publication of his work, in which convincing evidence as to the truth of his theory was set forth, there were those in the profession who gave it their most strenuous opposition. In about a year afterwards seventy of the principal physicians and surgeons in London declared their perfect confidence in the practice recommended. But when at length the benefit of vaccination came to be generally recognised, it was sought to deprive Jenner of the honour rightly due to him, by affirming that he was not the original discoverer.

"It is right and proper, indeed it is an imperative duty upon the medical profession, to hedge in the practice of medicine, and thus guard the public from the nostrums of ignorant quacks; but how many valuable medicines do we now find universally adopted by them, and regularly incorporated in the Pharmacopœia, against which, when they were originally propounded, the doctors cried out as being only useless and dangerous innovations? To take only one instance, the introduction of Jesuit's bark as a remedy in fevers. When the wonderful properties of this medicine were first made known to the world, it was generally decried by the members of the healing art. 'Thus we learn,' says Dr. Paris, 'that Oliver Cromwell fell a victim to an intermittent fever, because the physicians were too timid to make a trial of the bark.' For this he gives old Dr. Moreton as his authority. Even so late as the end of Charles the Second's reign, Evelyn, who in 1685 saw growing in the gardens at Chelsea 'the tree bearing Jesuit's bark which had done so much wonder in quartan agues,' informs us in his 'Diary,' that the physicians would not give the king *quinquina*, 'out of envy because it had been brought into vogue by Mr. Tudor, an apothecary!' Such examples tend to show that there are occasions when scepticism becomes folly, and prejudice almost a crime."

And then the article, which is a very long one, far too lengthy to quote, though full of the deepest interest, goes on to give a very correct, yet very graphic account of the

cruel wrongs done to many great inventors and discoverers. Those who take an interest in this matter would do well to get a copy of the *Practical Magazine* and read the article I am now referring to, for it is fitted abundantly to repay perusal. It commences at page 15 of the *Practical Magazine* for 1873. The following is a list of inventors and discoverers whose wrongs it directs attention to:—

1. Dr. William Harvey, who was persecuted for discovering the circulation of the blood.

2. Dr. Jenner, who was persecuted for discovering vaccination.

3. Mr. Tudor, an apothecary, who was persecuted for exerting himself to get quinine brought to the notice of the medical faculty as a cure for fever.

4. Galileo, who was persecuted by the Inquisition for demonstrating the true theory of the solar system.

5. The great Newton, who can hardly be said to have been persecuted, but who was not believed in by his countrymen, and who owed his celebrity to his praises being sung by a foreigner—the arch-atheist Voltaire.

6. Sir Hugh Myddelton, who was almost beggared for supplying London with pure water.

7. Sir Christopher Wren, who was persecuted for trying to make London the pattern city of the world.

8. The Duke of Bridgewater, who was persecuted for giving England her inland system of canals, and who was compelled to submit to the very great inconvenience of using only mules upon his canals, because Parliament would not allow him the use of horses and asses, from the extraordinary fear that canals would destroy the necessity for manual labour.

9. Brindley, who was persecuted along with the Duke of Bridgewater.

10. Arkwright, who was cruelly persecuted, even by his own wife, for founding the cotton manufacture of Great Britain, the staple commodity of our country.

11. Hargreaves, who was persecuted for inventing the spinning-jenny.

12. Dr. Edmund Cartwright, a clergyman and a man of letters, who was cruelly persecuted for inventing the power-loom weaving machine, and who had his factory with 500 of the new looms wilfully burned down.

13. Jacquard, who was cruelly persecuted for his invention of the Jacquard loom, who was imprisoned for inventing the machine-made net, and whose machines, by

order of the "Conseil des Prudhommes" of Lyons, were sold for old iron and old wood.

14. Telford, the celebrated engineer, who was covered with ridicule for supporting a project for a railroad between London and Woolwich.

15. William Murdoch, the celebrated engineer, who was treated with great contempt for occupying himself with planning an engine to run on a tramway.

16. Stephenson, the great engineer, who was treated with great contempt for proposing to carry the Liverpool and Manchester Railway across Chat Moss—an eminent engineer telling him that no man in his senses would attempt a railway over Chat Moss. Yet Stephenson completed it for the moderate sum of £28,000.

17. William Symington and Lord Dundas, who were ill-treated by the Directors of the Forth and Clyde Canal for having invented a steamboat with paddle-wheels.

18. Mr. Dyer, who was cruelly thwarted for having endeavoured to introduce steam navigation on the Thames, even such experienced engineers as Rennie and Ewart opposing him.

19. Sir Isambard Brunel, who was violently abused and insulted for having made a voyage from London to Margate in a steamboat of his own, propelled by a double-acting engine, even the landlord of the hotel at which he put up refusing to accommodate him with a bed.

20. Sir Robert Peel, who was loaded with much obloquy for inventing the present system of police, the numerous enemies of which branded it as a scheme for the Ministry to make themselves absolute, and to triumph over our political liberties. To show their spleen they branded policemen as *bobbies* and *peelers*.

21. Sir Rowland Hill, who was persecuted for his scheme of reducing inland postage from ninepence to one penny; Lord Lichfield, Postmaster-General, saying of it in the House of Lords, "*Of all the wild and visionary schemes which I have ever heard of, it is the most extravagant.*"

22. Mr. Wheatstone, who was covered with obloquy for his proposal to send messages from place to place by means of the electric telegraph. So much was Wheatstone considered a Utopian dreamer, that the following incident occurred when he was before a Committee of the House of Commons. One member asked him the question, "Now really do you think you could send a message from Dover to Calais?" Upon hearing this, another member of the

Committee said, "Now don't waste our time in asking such foolish questions."

23. Murdoch, who was persecuted for introducing gas. His enemies declared that gas was dirty, had an ill smell, produced headaches, and spoiled both pictures and furniture. "Sir Humphrey Davy, the greatest chemist of his age, denied the possibility of lighting the streets of London safely with coal gas. And in this opinion he was joined by such eminent men as Wollaston, Watt, and Lord Brougham."

Now these twenty-three cases are only a few of well-known historical cases, and for every one recorded in history there are at least a hundred unrecorded. What, then, ought to be done by Englishmen in view of all this injustice to inventors? The first thing is for the English nation to repent of its cruelty, as the Ninevites did in ancient times at the preaching of Jonah. The next thing is for the English nation to *acquire habits of justice and generosity to the poor in general and to inventors in particular*. The English nation must learn to *give*. It knows at present to talk about giving, but it knows how actually to give to the poor only imperfectly. This may be considered an interested assertion on my part. But better authorities say so more emphatically than I do. Let me quote one. The *Nonconformist and Independent* is the organ of the Nonconformists of England—that body to which Hume and Macaulay assign the sole honour of having preserved the liberties of England during the last three centuries. In the issue of the *Nonconformist and Independent* for May 16th, 1884, will be found an account of the annual meeting of the Congregational Church Aid and Home Missionary Society. At that meeting the Rev. W. E. Hurndall (Bow) said that the fact was growing upon him from day to day that what was really wanted in these urgent times was *larger giving*. Religious effort (and it is a religious duty to be just to inventors, let alone being generous to them) in this country was not receiving a fair share of the money which was spent by professedly Christian people. The income of this society was only as much as one London omnibus company received in penny and in twopenny fares in the course of three weeks. Turn for a moment from this society to a larger one—the great London Missionary Society. That received as much as the one omnibus company received in ten weeks; or as much as is spent in three days in the United Kingdom in the consumption of

that excellent product of nature, improved upon by man—namely, tobacco; or, still further, as much as had been drunk away in intoxicants during the duration of this meeting. Some time ago there was published a chart of what was spent in a year in the United Kingdom on intoxicating drinks and the amount spent on Christian missions. The one was one hundred and thirty-six millions of pounds sterling (£136,000,000), the other one million and fifty thousand pounds (£1,050,000). If this society had £100,000 a year, surely it would not be a penny too much. He did not think that their section of the Christian community would have done its part until the income of the London Missionary Society reached £100,000. The report referred to work amongst that section of the population which was somewhat injuriously called outcasts. A great deal was being heard (though not a bit too much) about the “Bitter Cry of Outcast London.” He would, in passing, call attention to the bitter response to that cry. The financial issue of that otherwise marvellously successful appeal amounted to little more than a bitter sarcasm. They heard the other day that through the issue of this pamphlet the London City Mission had received £10,000. While he was sitting, lamenting over the smallness of the amount, he came across a letter from one of the secretaries in the *Nonconformist and Independent*, in which it was stated that the real sum received through this channel was not ten thousand pounds, but only one hundred pounds, and that although this excellent institution (upon which the London Congregational Union had playfully stolen something of a march) proceeded to issue other bitter cries, the result only amounted to some five hundred pounds. The London Congregational Union, until it published its accounts, was somewhat secret, and not very easy of approach, but it announced that it had received already the munificent sum of £1,600. The real condition of Christian work in our cities was, he did not hesitate to say, one of starvation. Many of the people in the poorer districts were starving, and it seemed fitting that the religious agencies brought to bear upon them should be starving also. While thankful for the little that had been done, they cried most eagerly and earnestly for a great deal more to be done in their cities and in their villages. He had heard of a gentleman who dined at a continental hotel, and called a waiter to him, and said, “Waiter, I very much approve of the samples you have brought to

me ; please let me see the bulk." (Laughter.) They approved very much of the samples they had seen, but they also could not do without the bulk. In their aggressive work they were most frequently obliged to adopt an economy which was perfectly suicidal. The buildings which they had to use were for the most part grim and ugly, often bare walls. The furniture was frequently the poorest of the poor, and eminently suggestive of the Union. The lights were turned down economically, so that the gas bill at the end of the quarter should not be excessive. Books were handed round to those who were induced to come within the magic circle of the mission—books whose gaping backs uttered most bitter cries for the bookbinder (which, like some other bitter cries, were largely unheeded). In order to introduce an element of cheerfulness into the gathering, there was a performance upon a wheezy harmonium, rather less musical, and a good deal more out of tune, than the average barrel-organ. For the purpose of refreshing the inner man, there was served a decoction of tea and other leaves, which, unfortunately, had already paid one visit to the pot, and were scarcely improved by their second pilgrimage. (Laughter.) Tracts were sent from house to house clad in covers which seemed purposely designed to reduce the recipients to the very depths of despair. The whole thing was mean, poor, and shabby. The music-hall, the concert-room, and the theatre were not after this order, and he, for one, did not wonder that the poorer classes could be induced, only with the greatest difficulty, and in very small numbers indeed, to come within the sound of the voices of the ministry, and within reach of their work and their mission efforts. (Applause.) Aggressive work was to a large extent being played with rather than being done. Those engaged in the work appeared to be afraid lest they should be financially ruined by the process ; they cut down here, and they cut down there, until at last the thing was cut down and perished. The Salvation Army had been able to go ahead with large strides, because it had been financially favoured. (Hear, hear.) It was very seldom he hurled any hard words at that movement. He thought it wiser and better to reserve the hard words for Congregationalists, and Baptists, and Wesleyans, and members of the Church of England, who, by failing to support more decent and proper movements, had placed a decided premium on religious eccentricity. To-day a man was tempted to play the fool in order that he might

secure the help which was refused to others. (Applause.) It would have been impossible for the Salvation Army to do what it had done if it had not adopted eccentric means of arresting public attention. Had it been more sober, more refined, more Scriptural, it would have been allowed to die a natural death. They were told that what the churches wanted was the outpouring of the Divine Spirit. That he believed most thoroughly, but it had many a day been on his mind that while they were praying and longing for a Divine Spirit they were hindering the work of that Divine Spirit. The first thing to be done was to loosen the purse-strings of a Christian community. When the Divine Spirit fell of old upon the people they gave—not one-tenth of their income—many of them gave all that they possessed in order that the world might be converted. To-day there might be found men who, if, like Barnabas, they possessed land, would readily sell it (for land to-day was not a good investment in the country, and, if Mr. George had his way, it would not be a very good one in the towns). If a new Acts of the Apostles were written, it would be said of these men that they, having lands, sold them, and, after having selected out a few threepenny-pieces for collections and other benevolent objects, brought the price of the thing which was sold, and laid it out in some promising investment likely to pay from 10 per cent. to 15 per cent. He was willing to acknowledge that there were noble individual exceptions, and noble church exceptions; but in the matter of giving to the Church of Christ, the church was only in its infancy. They talked very much of their church and of their giving, but when it came to the real matter of what they were doing they fell grievously short. Men did not want more money in their pockets, but more grace in their hearts. There were two occasions upon which a man's income tended to fall very low indeed. One was when he was making up his income-tax return, and the other when he was asked for a subscription. (Laughter.) Those who did not keep a strict record of what they gave, firmly and conscientiously believed that they gave three times as much as they did. A man took his wife and family to the seaside, and thought not so much of the expense of doing that as of the hundred half-crowns which he dropped into the collection plate. Voluntary offerings were very often anything but voluntary, and there were places where it was necessary to have the collection in the middle of the service in order to avoid a stampede

at the close. (Laughter.) The world was within their reach if only they had the means to do the work. If they had the means, the Gospel might be efficiently carried to the five millions of London within twelve months. The whole world might be reached in ten years, if only the funds were forthcoming. They had the men; they had the women; they had the message; they had the Saviour; they had the Divine Spirit and the great God. *What was needed was the means.* This was a matter which should be urged upon the churches everywhere. People were being taught of all things to get; *they must be taught also to give.* Everybody was trying to be a little higher in the social scale. Would to God that there might be inaugurated a great giving crusade—a crusade so much nobler than the crusade of ancient times.” (Applause.)

The same paper says that forty-one families of every hundred families in Glasgow live in a single room.

In the same paper there is a very fine passage in the speech of the Rev. G. S. Reaney, which is as follows:—“When I know of those who are working for a penny an hour, who are making a shirt for three farthings, and when I know that there are huge fortunes made in this way, when I see the luxury of this modern Rome, I am not out of my place when I say to you, ‘Think about it, pray about it;’ and it may be there will come a statesman amongst our free churches in England who shall be able first to suggest the solution of this problem (as the solution of the question of free trade was suggested chiefly amongst the free churches in England). There will come a time of after-thought and of prayer, when it shall be impossible that there shall be amongst the people this unpaid toil, and this unearned increment of the capitalist. I hope, Dr. Parker, that you will rewrite that sentence of yours, and utter a curse not only upon the publican, *but upon the man who robs the poor and grows rottenly rich.*” (Loud applause.)

What all philanthropists ought now to do is this: they ought to stir up all classes to give to those who are poorer than themselves. And they ought with still greater energy to teach that poverty is the punishment inflicted by the Omnipotent himself on those who do not give to the poor, while abundance is the reward bestowed on those who do give to the poor. “There is that scattereth and yet increaseth; there is that withholdeth more than is meet, but it tendeth to poverty.” “Honour the Lord with thy substance, and with the first-fruits of all thine increase, so shall thy barns be filled with

plenty, and thy fruitbins shall be pressed down with a great abundance of ripe grapes." Now all these, and many other verses which might be quoted, teach that men are to learn to give from the hope of a certain reward—viz., abundance; and to avoid stinginess from the fear of a certain punishment—viz., poverty. But the common mode of teaching liberality by Christian teachers is to persuade men to give to the poor from very lofty motives—such as the duty of loving one's neighbour, the excellence of generosity, &c. I do not find the duty of giving to the poor so taught *in general* in the Bible. There the wisdom of giving is enforced by the hope of a reward and the fear of a punishment. But many teachers of this duty seem dissatisfied with the Biblical way of teaching it. They appear almost to verge upon the blasphemous opinion that God made a slight mistake in enforcing the duty of giving, by such lowly motives as the hope of abundance, and the fear of poverty. Such a procedure is being holier than God. It is probably owing largely to this erroneous mode of teaching the duty of giving that so few have learned to give regularly, systematically, and liberally. Even Jesus Christ, who was God incarnate, when teaching His hearers to give, made use of the following language: "Give, *and it shall be given you, good measure, pressed down, and shaken together and running over shall men give unto your bosom.* For with the same measure that ye mete withal, it shall be measured to you again." Now these words teach that giving is to be performed from the hope of receiving abundance from God, and that stinginess is to be avoided from the fear of receiving poverty from God. Again, those who teach the duty of giving say too little about the proportion of income to be given. Many erroneously consider that the Old Testament commanded the Jews to give a tenth of their income to the poor. This is a serious error, for the tithe or tenth was only one of many expenses that a Jew had to incur for the poor, and the purposes of his religion. Hebrew scholars who have studied the matter carefully, declare that the amount which the Almighty, through the mouth of Moses, commanded the Jews to give to the poor, and for the purposes of their religion, was three-tenths, or one-third of their incomes. Christians, who have had a higher revelation of God's love than the Jews ever had, might be expected to give more. But the more that is given to the poor, the greater is the prosperity which God in His providence in general sends. Samuel Budgett,

the successful merchant of Bristol, rose from being a poor shop-boy, on four shillings a week, to an income of twelve thousand pounds a year. But the secret of his success was his habit of giving *a sixth of his income*, quietly, regularly, and unostentatiously to the poor. Wilberforce had an income of fifteen thousand pounds a year. But the secret of his prosperity was his giving a fourth or a fifth of it to the poor. George Moore, with the same income, followed the same plan.

If a regular system of giving were followed by the English, poverty would disappear as if by enchantment, and neither inventors nor any other ill-used class would require to hurl denunciations against society, which, if it persists in disregarding the cries of the oppressed classes, will as certainly be destroyed as France was by its terrible revolution a century ago.

The only nation on earth that treats inventors well is America. This cannot be disputed, and therefore it does not require to be proved by regular arguments. One of the most recent, and also most graphic illustrations of this is found in the following statement:—

“On the 11th of April, 1884, the Legislature of the State of New York passed the following resolution: ‘*Whereas the incentives and rewards given to inventors by the Constitution of the United States and the laws of Congress passed thereunder, have done more, perhaps, than any one cause to advance our whole country to the front rank in wealth, resources, and industries among all nations in the world,*’ &c.” And then follow the resolutions for the benefit of inventors. (*Scientific American*, April 26th, 1884.)

It is not only the good Patent Law of America which benefits inventors. Everything else seems to conspire to the same end. Inventors are universally held in great honour in America, while in England they are despised and shunned as charlatans, until very successful. Banks also in America lend money readily to enable patents to be worked. No bank in England ever lends money on the security of patents. As soon as an American obtains a patent, he can, in most cases, sell it with great ease. In England few, or no men can sell patents, until they first find capital for their working. In America a poor man can make money by a patent. In England none but the rich have anything but a romantic hope of ever making money by patents. Contrast with the liberality breathed in the resolution of the New York Legislature already quoted the

stupidity, bigotry, and prejudice displayed by Baron Alderson in connection with railways. "In March, 1825, the bill for the Manchester and Liverpool Railway was referred to a Select Committee of the House of Commons, when George Stephenson was under cross-examination for three entire days. Mr. Alderson, afterwards Baron Alderson, the principal counsel against the bill, spoke for three whole days against it. At the conclusion of his speech he summed up by pronouncing Mr. Stephenson's plan to be "*the most absurd scheme that ever entered into the head of man to conceive.*" "My learned friends," said he, "almost endeavoured to stop my examination. They wished me to put in the plan, but I had rather have the exhibition of Mr. Stephenson in that box. I say he never had a plan; I believe he never had one—I do not believe he is capable of making one. His is a mind perpetually fluctuating between opposite difficulties. He neither knows whether he is to make bridges over roads or rivers of one size or another, or to make embankments or cuttings, or inclined planes, or in what way the thing is to be carried into effect. Whenever a difficulty is pressed, as in the case of a tunnel, he gets out of it at one end, and when you try to catch him at that, he gets out at the other." (*Practical Magazine* for 1873, page 18.)

The above quotation almost proves that one of the surest signs of a proposed invention in England being a good one is its being condemned in the strongest language, by the very persons who ought to welcome and foster it—by, in fact, the stupid class saying to the inventor, "*Thou art mad.*"

But some will say that it is very unfair to condemn the present generation as exceedingly unkind to inventors, by quoting against them facts which occurred as far back as 1825. Very well then, what have such apologists to say about the treatment that Waghorn and his sisters received? The conduct of Britain to Waghorn is unspeakably disgraceful. Well may every patriotic Englishman blush when he reads of the cruelty of Britain in the case of Waghorn and his sisters? While Lesseps was ennobled by France, Waghorn died in poverty, and his sister died in a workhouse.

The Suez Canal has brought especial benefits to two countries—England and India. And the following is an extract from one of the leading Indian papers:—

"The Lord Mayor (Mr. Alderman Fowler, M.P.) presided

over a meeting held on the 3rd March, 1884, to raise a memorial to Lieutenant Waghorn, R.N. Sir W. Andrew gave some interesting particulars of the difficulties with which Waghorn had to contend. He was thought to be crazed on the subject by the public, and his projects were pooh-poohed by the Government."

There are few greater sins that a nation can commit than that of treating such men as Waghorn in the way in which he was treated. The nation thinks lightly of them, but God punishes them with marked severity. Columbus was cruelly treated by Spain, though he added half a hemisphere to her colonial possessions; and God punished that cruelty by making the half hemisphere so added a curse and not a blessing. There is a remarkable passage in Malachi ii. 2 which runs thus: "*I will curse your blessings.*" God has a variety of ways in which He executes vengeance for the oppressed, and one of them is that of cursing an individual's or a nation's blessings. Spain is a notable illustration of this; and no more Columbuses have been vouchsafed to Spain, which has fallen from the loftiest place among the nations to the very lowest place. "*They that have not, from them shall be taken even that which they seem to have.*"

That we have not by any means improved in our treatment of great inventors in the present day, as compared with the treatment accorded to them by our fathers, is only too sadly evident from the following quotation from the *Englishman*, one of the leading English papers in Hindostan. It bears the date of June 20th, 1883, and runs as follows:—"Mr. Richard Pratt, of Rochester, and Captain A. P. Wall, of 16, Glengall Terrace, Old Kent Road, S.E. London, will gladly receive subscriptions for the relatives of Waghorn. The sister of the almost-forgotten pioneer of the overland route, Lieutenant Thomas Waghorn, the indomitable man who brought India so near to us, died last week in Rochester Workhouse, almost in poverty and destitution. A grateful Government and country had awarded her and two old sisters (now in Melbourne), the munificent sum of £25 per annum, to sustain life and the reputation of her brother upon! But for the kindly brothers Foord, of Rochester, and the excellent vicar of Snodland, where Thomas Waghorn was buried, a pauper's funeral would probably have been her lot. The *Daily Telegraph* and other papers, when the fact was conveyed to them, called

attention to the poor woman's dying in the workhouse, and at once subscriptions were forthcoming, though the gentlemen mentioned before had already done all that was needful. What a pity that attention could not have been called to the case years ago, and the poor old lady—she was nearly eighty years of age—better provided for. One journal says, 'Had Lieutenant Waghorn slaughtered a handful of niggers, or smashed the windows of a town from an ironclad, his sister would have had something very different from ten shillings and a workhouse shroud.'

• Shame! shame! shame! on Englishmen—especially on rich Englishmen—that their niggardliness and injustice—that their repeated and almost unpardonable cruelty to inventors and men of genius, have rendered it possible for newspapers to chronicle such national disgrace! These words, however, are written, not to drive the English nation to despair, and not, certainly, for the purpose of inflicting pain, but with a view to lead England to repentance. "Rebuke a wise man, and he will love thee. Rebuke a fool, and he will hate thee." If England were an utterly foolish nation, this pamphlet had never been written; for it is great folly to cast pearls before swine, and to give that which is holy to dogs. It is because the author of this pamphlet believes England to be the wisest nation on earth, and because he desires to secure her love and affection, that he thus deals in rebuke.

These acts of cruelty towards inventors are also, it must be confessed, due rather to want of thought than to want of heart. Englishmen are too busy to be just to inventors; but they are not too busy to suffer God's wrath for their neglect of inventors. As the English nation metes out sorrow to inventors, so the Almighty writes *depression, depression, depression* on British trade, British manufactures, British Parliamentary business, British shipping, British agriculture, British foreign policy, and British everything.

Let the English nation, then, begin to take thought for inventors. Let them devise wise measures, by which injustice to inventors may cease, and the Almighty will gladly remove those chastisements which, there is not much doubt, He has been sending the nation for this among other national crimes.

The whole history of the Suez Canal reflects the greatest discredit upon England, as the following extract will show:—"Some of the greatest schemes for the benefit of mankind have been opposed on political grounds; as,

for instance, that of the famous ship-canal through the isthmus of Suez. This project, when first propounded by M. de Lesseps, was bitterly opposed by no less a statesman than Lord Palmerston, who, to the end of his life, contended against it. Engineers of the highest eminence also pronounced against it. They represented that the levels of the Mediterranean and Red Seas were so different, that it would be impossible to prevent an impetuous current flowing through the canal; likewise that the shifting sands along its sides would overwhelm the work, and that the silt on the northern shore would choke up the mouth at Port Said. Even Robert Stephenson, who was sent over expressly by Lord Palmerston to report on the scheme, denounced it as one that was *utterly impracticable*. In spite of such formidable opposition, however, M. de Lesseps continued his operations, and, with the warm support of the Empress Eugenie, these were at length brought to a successful issue.

"When the result came to be foreseen as morally certain, Lord Palmerston declared in the House of Commons that the opening of the Suez Canal must give a vast advantage to France as compared with this country, by enabling her fleets to pass through it from Toulon into the Indian seas long before ours could find their way there.

"We now smile at the apprehensions of the aged Minister—apprehensions that were shared by numerous persons in this country—but we should recollect that when Lord Palmerston gave utterance to them, Napoleon III. was in the plenitude of his power, long before the disasters and humiliation which France had to sustain through her war with Germany.

"This gigantic undertaking, first conceived in 1854, the works being commenced in 1859, was finished in December, 1869, when the Suez Canal was thrown open to the commerce of the world." (*Practical Magazine* for 1873, p. 18.)

It will be apparent to the meanest intellect that such frequent, such repeated, and such powerful persecution of inventors as the facts already mentioned reveal, must have the most pernicious effect on the minds of thousands possessed of great inventive genius. Such men and such women will reason thus:—"I see from the lives of inventors that cruel persecution has almost invariably been their lot. Those inventors who have outlived their persecutions have been men of very strong and determined wills. I know that I have most valuable inventive talent. But I also

know that I have not such a strong mind and such a resolute will as successful inventors seem to have had, and therefore I shall let inventions alone." Can any one blame an inventor or an inventress under such circumstances if he or she refuses to benefit the world by his or her inventive skill? Had inventors been sufficiently encouraged, there is not the slightest doubt that two tremendous evils from which England now suffers in a very acute form, a form so acute that it may yet precipitate a revolution, would have disappeared like mist before the wind. These are the underpaying of overworked individuals, such as needlewomen, who get three-farthings for making a shirt, and matchbox makers, who get an equally unfairly low remuneration; and the overcrowding of big cities like London, until nearly one-half of all the families it contains dwell in only one room.

There are many ways in which the crying sin of the present day might be successfully repressed—the sin, namely, of giving utterly insufficient pay for useful work.

The following is one way of checkmating it.

There are many thousands of just people in England, who burn with indignation at the thought of poor needlewomen being worked to death at shirt-making for wages which are so insufficient that they can hardly keep body and soul together. Shirts they must wear. And as they can get them in no other way than through the white slave-drivers, they are compelled to purchase from them, and so to become partakers in the sin and in the punishment of these English oppressors.

But let a factory be established by philanthropists for the making of shirts, in which each needlewoman shall receive amply sufficient pay, shall be worked only eight hours a day, shall be nursed when sick, and pensioned when superannuated, and there are hundreds of thousands of people in England who are so thoroughly convinced of the miseries which they are compelled to suffer by being participators in the sin of oppression, that though they had to pay twice the skinflint price for a shirt, they would gladly and gratefully do so.

There are millions in England who will always buy the cheapest article, however stained with blood it may be. But there are hundreds of thousands who would be overjoyed to find a means of escape from such wickedness.

But if any inventor were so imprudent as to propose such a scheme, a host of opponents would denounce it with

the very same words with which Baron Alderson opposed the first railway, and would solemnly declare "*that it was the most absurd scheme that ever entered into the head of man to conceive.*"

Similar things might be written about the overcrowding of London and other large cities. It might be shown that ancient cities—notably the ancient nations inhabiting Greece and Italy—made colonisation one of the chief duties of the government. The Sabines in Italy, for instance, had a law which set apart all the children, and all the cattle, born every twentieth year, as sacred to colonisation. When they reached a suitable age they were sent to found a new colony, with an abundant supply of every requisite for complete and permanent success. It might also be shown that if Christians paid sufficient attention to the religion they profess to follow, they would recollect that God has commanded men *to replenish the earth* (Gen. i. 28, and ix. 1). Now the earth cannot be replenished unless it is first colonised. If governments attended to their duty in anything like a proper manner, they would have a regular organisation for carrying out a thorough system of colonisation. But if any one were to be so foolish as to propose any such scheme as this, he would be told in pretty plain language by all his critics, that (as Baron Alderson said to Stephenson about his proposed railway) "*it is the most absurd scheme that ever entered into the head of man to conceive.*"

It seems almost hopeless to get the English nation to honour inventors, for there is not the slightest doubt that the universal custom in England is to consider an inventor as nothing better than a crack-brained fool. If an inventor in England makes money by his inventions, he is honoured very much; but it is because he is rich, not because he is an inventor. If he had made his money by gambling speculations in railway shares he would be more highly honoured than for having made it through an invention.

Yet this insane tendency must be combated by sensible Englishmen, if they do not wish to see their country outstripped by America. Now, the English nation does pay some attention to the Bible, and the Bible commends inventors and inventions. Therefore let Christian England cease her cruel treatment of inventors. The words of Scripture are, "*I Wisdom dwell with Prudence, and find out knowledge of witty inventions*" (Prov. viii. 12). The Bible also says, "*Subdue the earth, and have dominion over it*"

(Gen. i. 28). Now, inventions are the best means that history gives us any record of, for enabling man to subdue the earth, and to gain dominion over it.

Again, the English nation pays great attention to the writings of Lord Bacon. Therefore let its people ponder the following words of Bacon: "The introduction of great inventions appears to hold by far the first place among human actions, and it was considered so in former ages; for to the authors of inventions they awarded divine honours, but only heroic honours to those who did good service to the State (such as the founders of cities and empires, legislators, deliverers of their country from long-endured misfortunes, quellers of tyrannies, and the like). And certainly if any rightly compare the two, he will find that this judgment of antiquity was just, for the benefit of inventions may extend to the whole race of man, but civil benefits only to particular places; the latter, moreover, last not beyond a few ages, the former for ever. The reformation of the State in civil matters is seldom brought about without violence and confusion, while inventions carry blessings with them, and confer benefits without causing harm or sorrow to any." (*Scientific American*, March 15th, 1884).

Inventors do not want the divine honours which Lord Bacon tells us were paid to their class by the nations of antiquity. To accept divine honours would be to commit idolatry. But inventors do most earnestly desire, and have a right to expect, that those who profit by their inventions should remember the words of the God they profess to worship—"The labourer is worthy of his hire." And yet, though inventors do not want the divine honours referred to by Bacon, it is well that attention should be directed to the fact that there is something divine about invention. The fundamental doctrine of the Christian religion is that God sent His only begotten Son Jesus Christ to die in man's room and stead, in order that men, believing in this atonement, might be free from the punishment and the power of sin. Now this act on the part of the Omnipotent is frequently spoken of as a plan. Holy Writ informs us that God devised a plan for man's redemption; that is to say, God invented a method of saving the human race. The actions of inventors, then, though not divine in the sense referred to by Lord Bacon, are yet similar in their nature and essence to the divinest of all acts.

Bacon tells us of the extraordinary and even inter-

perately great honour which the ancients used to bestow on inventors, but in these modern days we have improved upon all that. Nowadays we starve, torture, torment, and crucify an inventor while he lives, and when he is dead we raise no end of statues to his memory. It is just such inhuman conduct as this which stirs up good men like General Gordon to write the scathing things they do of existing society. Can any one deny that there is perfect truth in the following saying of Gordon's? "There would be no one so unwelcome to come and reside in this world as our Saviour, while the world is in the state it now is. He would be dead against nearly all our pursuits, and be altogether *outré*." Now, the cruelty perpetrated on Christ is exactly and identically the cruelty perpetrated on inventors. When the Jews refused to believe in Christ, then it was that they began to crucify Him. And inventors are treated in much the same way. They are not believed. Innumerable facts might be quoted in proof of this. Let me adduce one or two: "In 1825 Mr. Nicholas Wood, in his work on railways, calculated the utmost speed of a railway train at *six miles an hour* drawing forty tons on level ground. Nothing," he says, "could do more harm towards the adoption of railways than the promulgation of such nonsense as that we shall see locomotive engines travelling at the rate of twelve, sixteen, eighteen, and twenty miles an hour." Now, here was Mr. Wood, who had talent enough to write a book on railways, yet such a very cruel unbeliever in the prophecies of Stephenson regarding railways, that he declared that no greater speed could be attained upon them than six miles an hour.

Facts have proved that Stephenson's modest prophecies were rather under than over the truth. Forty miles an hour is an exceedingly common speed on railways in the present day. Many trains go fifty miles an hour. A smaller number go sixty miles an hour; and seventy-five miles an hour has been reached on one or two occasions on the Great Western. Incredible though this speed may appear, it has been much surpassed by the ice-yachts on American rivers. In the winter time in America, when the lakes and rivers are frozen over, the rich launch their ice-yachts, which are combinations of wood, capable of moving over the ice by means of sails in much the same way that a skater moves. These boats are from ten to fifty feet in length, and carry two or three people. With a good spanking breeze they easily go over the ice at the rate of

one hundred miles an hour ; and with a wind strong enough to be safe, and yet almost a gale, they have frequently moved at the rate of two miles a minute, or one hundred and twenty miles an hour. These facts can all be verified by referring to the early numbers of the *Scientific American* for 1884. Yet in the face of all these facts, which might, without much difficulty, have been predicted by scientific men, Mr. Nicholas Wood, in 1825, laughed poor Stephenson to scorn, and declared that "*nothing could do more harm towards the adoption of railways than the promulgation of such nonsense as that we shall see locomotive engines travelling at the rate of twelve, sixteen, eighteen, and twenty miles an hour.*" When shall people believe that truth is stranger than fiction !

Not only did individual engineers denounce what they were pleased to consider the folly of those who declared that a speed of twenty or thirty miles an hour might be attained on railways, but the most sagacious organs of public opinion were guilty of the same folly, which in this case was cruelty as well as folly. The following, for instance, is an extract from the *Quarterly Review* for March, 1825 :—"As to those persons who speculate on making railways general throughout the kingdom, and superseding all the canals, all the waggons, mail and stage coaches, postchaises, and, in short, every other mode of conveyance by land and by water, we deem them and their visionary schemes unworthy of notice. Every particular project must stand or fall by its own merits ; and we are greatly mistaken if many of those which are already announced will not, when weighed, be found wanting. The gross exaggerations of the powers of the locomotive steam engine, or, to speak in plain English, the steam-carriage, may elude for a time, but must end in the mortification of those concerned." It then goes on to ridicule a project for a railroad between London and Woolwich, which had received the support of so eminent an engineer as Telford, and continues : "In a similar strain we find a countryman of Mr. Telford writing thus : 'We shall be carried at the rate of four hundred miles a day with all the ease we now enjoy in a steamboat, but without the annoyance of sea-sickness, or the danger of being burned or drowned.'" The *Quarterly Review* comments on this sentence in the following way :—"It is certainly some consolation to those who are to be whirled at the rate of eighteen or twenty miles an hour by means of a high-pressure engine, to be told that they are in no

danger of being sea-sick while on shore ; that they are not to be scalded to death nor drowned by the bursting of the boiler ; and that they need not mind being shot by the scattered fragments, or dashed in pieces by the flying off or the breaking of a wheel. But with all these assurances, we should as soon expect the people of Woolwich to suffer themselves to be fired off upon one of Congreve's ricochet rockets as trust themselves to the mercy of such a machine going at such a rate. Their property, perhaps, they may trust ; but while one of the finest navigable rivers in the world runs parallel to the proposed railroad, we consider the other 20 per cent. which the subscribers are to receive for the conveyance of heavy goods almost as problematical as that to be derived from the passengers. We will back Old Father Thames against the Woolwich Railway for any sum."

Even Watt himself originally planned his locomotives merely for use on country roads with ordinary speed ; and when his assistant, William Murdoch, was occupying himself with planning an engine to run on a tramway, he thought it a waste of time, and requested his partner Boulton to tell Murdoch that this was his opinion.

When it became known that the bill for the Liverpool and Manchester Railway would be proceeded with in 1825, a strong opposition was immediately organised against it. Mr. Smiles informs us that "the canal companies prepared to resist the measure tooth and nail." "The public were appealed to on the subject ; pamphlets were written, and newspapers were hired to revile the railway. It was declared that its formation would prevent cows grazing and hens laying. The poisoned air from the locomotives would kill birds as they flew over them, and render the preservation of pheasants and foxes no longer possible. Householders adjoining the line were told that their houses would be burnt up by the fire thrown from the engine-chimneys, while the air around would be polluted by clouds of smoke. There would no longer be any use for horses ; and if railways extended, the species would become extinguished, and oats and hay be rendered unsaleable commodities. Travelling by rail would be highly dangerous, and country inns would be ruined, boilers would burst and blow passengers to atoms. But there was always this consolation to wind up with—that the weight of the locomotive would completely prevent its moving, and that railways, even if made, could *never* be worked by steam-power. Neverthe-

less, the canal companies of Leeds, Liverpool, and Birmingham called upon every navigation company in the kingdom to oppose railways wherever they were projected, but more especially the Liverpool and Manchester scheme, the battle with which they evidently regarded as their Armageddon. A Birmingham journal invited a combined opposition to the measure, and a public subscription was entered into for the purpose of making it effective. The newspapers generally spoke of the project as a mere speculation; some wishing it success, although greatly doubting; others ridiculing it as a delusion." (*Practical Magazine* for 1873, page 17.)

The *Engineer* has the following extract from a standard work on chemistry that was very popular about seventy-five years ago:—

"Does it then appear probable that this mode of illumination by coal-gas will ever be brought into general use?" Such is a question in the book, to which the following answer is given:—"By no means; it may answer very well in particular instances, as in large manufactories, &c., but so many and so great are the objections to its general use, and so great the mischiefs that would follow *even an attempt of that nature*, that no disinterested person who has considered the subject, and whose experiments have qualified him to judge of it, can admit even the possibility of success in any attempt to bring it into general use; the countenance that has been given to proposals of this nature only serves to show *how easily we Englishmen are imposed on*, and how perfectly aware of this circumstance are foreigners in general."

Few things show so well the pernicious nature of unbelief regarding inventions as the history of the Post-office. Many will probably hardly credit the following, yet they are facts without any exaggeration. Sir Rowland Hill's scheme for a uniform and low rate of postage was first laid before the public in the year 1837 in a pamphlet entitled, "Post-office Reform: its Importance and Practicability." The principle of uniformity and cheapness, which was clearly laid down in this publication, immediately attracted general notice. From calculations which he had made of the number of letters passing between London and Edinburgh, as well as other places, the author showed that the principle of uniformity and cheapness might be safely relied on, and that although the revenue might suffer at first from the reduction of the average inland postage of nine-

pence to a penny, still that eventually the exchequer would be more than reimbursed from the vast amount of extra correspondence which would be carried on throughout the three kingdoms.

Although favourably received by the merchants and bankers, the Post-office authorities immediately derided the new scheme when it was laid before them. Lord Lichfield, then Postmaster-General, said of it in the House of Lords:—"Of all the wild and visionary schemes which I have ever heard of, it is the most extravagant." On another occasion, speaking of the increased number of letters, he said, "The mails will have to carry twelve times as much in weight, and therefore the charge for transmission, instead of £100,000 as now, must be twelve times that amount. *The walls of the Post-office would burst*; the whole area in which the building stands would not be large enough to receive the clerks and letters." Notwithstanding this opposition, however, when brought before Parliament, and referred to a Select Committee of the House of Commons in 1838, the report was decidedly in favour of the scheme, the Committee declaring "that the principle of a low uniform rate is just in itself; and when combined with prepayment and collection by means of a stamp, would be exceedingly convenient and highly satisfactory to the public." Eventually the proposal was embodied in a bill brought in by the Chancellor of the Exchequer himself, which passed the House of Commons by a majority of 100, and became law on the 17th of August, 1839.

When the measure was under discussion in the House of Commons, even Sir Robert Peel, although he did not absolutely oppose it, spoke of it in disparaging terms, quoting the opinions of Lord Lichfield, before mentioned, and of Colonel Maberly, Secretary to the Post-office, against it. That of Colonel Maberly was to the following effect. "He considered the whole scheme of Mr. Hill as *utterly fallacious*; he thought so from the first moment he read the pamphlet of Mr. Hill; and his opinion of the plan was formed long before the evidence was given before the Committee. The plan appeared to him *a most preposterous one, utterly unsupported by facts, and resting entirely on assumption*. Every experiment in the way of reduction which had been made by the Post-office had shown its fallacy; for every reduction whatever led to a loss of revenue in the first instance. If the reduction be small the revenue recovers itself; but if the rates are to be

reduced to one penny, the revenue would not recover itself for forty or fifty years!"

With such an official at the head of the Post-office, it was only natural that the new measure should receive considerable discouragement when first brought into practical operation. Indeed, this continued to be the case for some years. The officials who had to work it proved to be, as Mr. Baring expressed it, "unwilling horses." Colonel Maberly himself virtually acknowledged this. "My constant language," he says, "to the heads of the departments was, '*This plan we know will fail.*' It is your duty to take care that no obstruction is placed in the way of it by the heads of the department and by the Post-office. The allegation, I have not the least doubt, will be made at a subsequent period, that this plan has failed in consequence of the unwillingness of the Government to carry it into proper effect." Such was indeed their duty, but they notably failed to discharge it, and Mr. (afterwards Sir Rowland) Hill had a very up-hill battle to fight in endeavouring to secure the ultimate success of his measure. That success, however, came in due time. Moreover, it came in the lifetime of its author, and it has been, not only successful, but splendid. Every civilised country has adopted the principles and method of postage laid down by Sir Rowland Hill, and wherever adopted, these have proved eminently successful. In our own country, according to the latest return, the estimated revenue from the Post-office for the year 1872-73 amounted to as much as £4,770,000; and in 1871 the number of letters delivered throughout the United Kingdom reached the enormous amount of 917,191,000!" (*Practical Magazine*, p. 20.)

The misery inflicted on the poor by dear postage on letters, as well as the temptation placed in their way of dishonesty, is vividly shown from an episode in the life of Coleridge. That poet, happening to be at an inn when the postman came to give a letter to the barmaid, felt his compassion excited on seeing the barmaid return the letter to the postman with a sigh, saying that she was too poor to pay a shilling for its postage. Coleridge at once put his hand into his pocket, took out a shilling, gave it to the postman, and carried the letter in triumph to the barmaid. What was his astonishment to find that she received it with coldness bordering on aversion. On his asking her for an explanation of her conduct, she said to him, in a low voice, and looking round to see that there were no

eavesdroppers, "Can you keep a secret?" "Yes," replied Coleridge. "Then," said the barmaid, "you have, with the best intentions, thrown your shilling away. But I thank you all the same, for your action was kindly meant." "What do you mean?" said Coleridge, "you speak in riddles. Is not that your own letter which you hold in your hand? And can you not open and read it if you like?" "Yes, I can," said the barmaid, "but there is nothing in it." And suiting the action to the word, she broke the seal, opened the letter, and showed Coleridge that there was nothing but blank paper inside. She said the letter was from her lover, to whom she was engaged. And as both he and she were too poor to pay for postage, they had agreed to send, once a fortnight, a letter to each other with only a blank sheet of paper inside. At the right side of the seal there was to be a very small cross, if the sender was well; if ill, a very small circle at the left side. The receiver then got the letter from the postman, looked for the cross or the circle, and then returned it with a sigh, stating that he (or she) was too poor to pay the postage.

The barmaid in the above episode told Coleridge that he had thrown a shilling away; but this was incorrect. He had made the Government the present of a shilling. The time may come when subjects will pay at least a portion of taxation voluntarily, just as missionary societies are supported by nothing but voluntary subscriptions. When taxation is paid voluntarily, the easiest way of doing so will be to tear up a guinea's worth or two guineas' worth of stamps. Every stamp destroyed without being used in postage is a gift to the Government, given secretly, unostentatiously, and without any blowing of trumpets.

It is right to denounce the present Excise laws, for they encourage drunkenness. Few men have ever uttered more important truths in a more telling manner than the late lamented Duke of Albany did, when he said, "I think if we can train the children early to see the difference between what dirt, and waste, and selfishness make of a poor man's dinner, and what thrift, and care, and cleanliness can make of it at the same cost, we shall be civilising them almost more directly than by our sums or our grammar, and shall be taking in flank *our great enemy, drink—drink, the only terrible enemy whom England has to fear.*"

It is the work of a true patriot to denounce drink as the great enemy of Britain. In doing this, however, we reflect most terribly on the excise laws of England. Now there is no doubt of this, that one great reason why the Governments of Europe are driven to the cruel and nationally destructive step of deriving a revenue from the vice and misery of their subjects is the great aversion of the virtuous classes to allow the articles they use to be taxed. As the virtuous therefore refuse to pay taxes, the Government is almost compelled to get them paid by the vicious classes. And vice is thereby encouraged. For it is a law to which no exception has yet been found, that in a free State, the classes which pay the greatest amount of taxes acquire the greatest amount of political power, and consequently of wealth—*e.g.*, soap-boilers, publicans, opium merchants. We see this in England, where crimes arising from drink are treated with as much lenity and consideration as are the crimes committed by the aristocracy. The Government is compelled to be wonderfully kind to drunkards, because they are the best patriots, inasmuch as they pay such a large part of the taxation. But if the virtuous classes ever wish to see the iniquitous excise laws abolished, they must be prepared to allow Government to tax milk, lemonade, soda-water, ginger-beer, tea, coffee, sugar, and coal. It would certainly be wise also to aid Government by voluntary contributions, as missionary societies are aided. Such contributions would be like the cream of milk—immensely superior in value to, though immensely less in quantity than, the milk. And the best, easiest, and most unostentatious way of giving voluntary subscriptions to Government would be by the destruction of postage stamps. For every stamp destroyed before it is used is a present to Government. Any man in England can easily pay Government an income tax of five per cent. of his income, without letting the Government know, by merely destroying postage stamps to that amount. Such a suggestion will of course meet with the same hostile reception from the virtuous opponents of the iniquitous excise laws of England that Stephenson's proposed railway received from Baron Alderson, when he said, "*It is the most absurd scheme that ever entered into the head of man to conceive.*"

There is no doubt that poor inventors have been greater sufferers from England's cruelty towards their class than rich inventors have been. And yet not a few memorable and appalling illustrations of national cruelty and national

stupidity in persecuting aristocratic English inventors are recorded on the page of history. The following are samples.

Perhaps one of the very greatest inventions of modern times has been the celebrated "Sinking Fund" of the great Pitt. "The public attention at this period had been strongly directed to the prodigious powers of accumulation of money at compound interest; and Dr. Price had demonstrated with mathematical certainty, that any sum, however small, increasing at that rate, would in a given time extinguish any debt, however great. *A penny laid out at compound interest at the birth of our Saviour would, in the year 1775, have amounted to a solid mass of gold eighteen hundred times the whole weight of the globe.* Mr. Pitt, with the instinctive sagacity of genius, laid hold of this simple law, to establish a machine by which the vast debt of England might, without difficulty, be discharged. All former sinking funds had failed in producing great effects, because they were directed to the *annual* discharge of a certain portion of debt; not the formation by compound interest of a fund destined to its future and progressive liquidation; they advanced, therefore, by addition, not multiplication—in an arithmetical, not a geometrical, ratio. Mr. Pitt saw the evil, and not merely applied a remedy, but more than a remedy; he not only seized the battery, but turned it against the enemy. The wonderful powers of compound interest, the vast lever of geometrical progression, so long and sorely felt by debtors, were now to be applied to creditors; and inverting the process hitherto experienced among mankind, the swift growth of the gangrene was to be turned from the corruption of the sound to the eradication of the diseased part of the system. Another addition, like the discovery of gravitation, the press, and the steam-engine, to the many illustrations which history affords of the lasting truth, that the greatest changes both in the social and material world are governed by the same laws as the smallest; *and that it is by the felicitous application of familiar principles to new and important objects, that the greatest and most salutary discoveries in human affairs are effected.*

"Mr. Pitt's mind was strongly impressed with the incalculable importance of this subject, one before which all wars or subjects of present interest, excepting only the preservation of the constitution, sank into significance. From the time of his accession to office in 1784, his atten-

tion had been constantly riveted upon it, and he repeatedly expressed, in the most energetic language, his sense of its overwhelming magnitude. 'Upon the deliberation of this day,' said he, in bringing forward his resolutions on the subject on 29th March, 1786, 'the people of England place all their hopes of a full return of prosperity, and a revival of that public security which will give vigour and confidence to those commercial exertions upon which the flourishing state of the country depends. Yet not only the public and this House, but other nations are intent upon it; for upon its deliberations, by the success or failure of what is now proposed, our rank will be decided among the Powers of Europe. To behold this country, when just emerging from a most unfortunate war, which had added such an accumulation to sums before immense, that it was the belief of surrounding nations, and of many among ourselves, that we must sink under it—to behold this nation, instead of despairing at its alarming condition, looking boldly its situation in the face, and establishing upon a spirited and permanent plan the means of relieving itself from all its encumbrances, must give such an idea of our resources as will astonish the nations around us and enable us to regain that pre-eminence to which, on many accounts, we are so justly entitled.' The bill to form a sinking fund passed both Houses without a dissentient voice; and on the 26th May, 1786, the King gave it the royal assent in person, to mark his strong sense of the public importance of the measure.

"The sinking fund thus provided was amply sufficient to have discharged all the existing debt of Great Britain within a moderate time. The sinking fund continued to be administered with exemplary fidelity, not only during Mr. Pitt's life, but after his death, till 1813, when a total change in the system took place, which eventually led to its ruin, and has, to all appearance, rendered the financial state of the country almost desperate. To obtain a clear view of the practical effects of Mr. Pitt's system, it is necessary to anticipate somewhat the march of events and give a summary of the operation of the sinking fund which he established down to the period when it was abandoned by his more embarrassed and less provident successors.

"From the accounts laid before Parliament, it appears that the sinking fund of a million, which Mr. Pitt established in 1786, had increased by accumulation at compound interest, and the great additions drawn from the one per

cent. on the vast loans from 1792 to 1812, to the enormous sum of fifteen millions and a half yearly in 1813, while the debts which it had discharged during that period amounted to no less than £238,231,000 sterling. This great increase had taken place in twenty-seven years; whereas Mr. Pitt had calculated correctly that his original million would be only four millions in twenty-eight years, the well-known period of the quadruplication of the sum at compound interest at five per cent. The subsequent £200,000 a year granted, undoubtedly accelerated in a certain degree the rate of its advance; but the true cause of the extraordinary and unexpected rapidity of its increase is to be found in the prodigious accumulation which the one per cent. on subsequent loans produced.

"While the nation in general were entirely satisfied with Mr. Pitt's financial statements, and, delighted with the rapid growth of the sinking fund, never examined whether the funds for its prodigious extension were provided by the fictitious supply of loans, or the solid growth of the revenue above the expenditure, a few more sagacious observers began to inquire into the solidity of the whole system, and, mistaking its past operation, which had been almost entirely *during war*, for its *permanent* character, which was to appear chiefly on the return of peace, loudly proclaimed that the whole was founded *on an entire delusion*; that a great portion of the sums which it paid off had been raised by loans; that at all events, a much larger sum than the amount of the debt annually redeemed had been actually borrowed since the commencement of the war; that it was impossible that a nation, any more than an individual, could discharge its debts by mere financial operations, and that the only way of really getting quit of encumbrances was by bringing the expenditure permanently under the income.

"These doctrines soon spread among a considerable part of the thinking portion of the nation; but they made little general impression till the return of peace had diverted into other channels the attention of the people, formerly concentrated on the career of Napoleon; and democratic ambition, taking advantage of national distress, had begun to denounce all that had formerly been done by the patriots who had triumphed over its principles. Then they speedily became universal. Attacks on the sinking fund were eagerly diffused and generally credited; the delusion of Mr. Pitt's system, the juggle so long practised on the

nation, were in every mouth ; the meanest political quacks, the most despicable popular demagogues, ventured to discharge their javelins at the giants of former days ; and a system on which the greatest and best of men in the last age had been united, in commendation of which Fox had vied with Pitt, and Sheridan with Burke, was universally denounced as the *most complete and ruinous deception that ever had been palmed off by official fraud on the credulity of mankind.*

“ Had these doctrines been confined to the declamation of the hustings, or the abuse of newspapers, they would have furnished the subject only of curious speculation on the way in which principles, just to a certain extent, and truths, undeniable as they were originally stated, became perverted when they were employed beyond what their authors intended, as an engine for the purposes of faction or ambition. But unhappily the evil soon assumed a much more serious complexion. The prevailing ideas spread to the Legislature, and the statesmen who succeeded to the government, imbued partly with the declamation of the period, influenced partly by the desire of gaining a temporary popularity by the reduction of the public burdens without any regard to the interests of future times, went on borrowing or abstracting from the sinking fund till it was totally extinguished.

“ It is only by attending to the abandonment of Mr. Pitt's system, and the effects by which that change has been, and must be attended, that the incalculable importance of his financial measures can be appreciated, or the wisdom discerned which, so far as human wisdom could, had guarded against the evils *which must, to all appearances, in their ultimate consequences, dissolve the British empire.*

“ It is perfectly true, as Mr. Hamilton and the opponents of the sinking fund have argued, that neither national nor individual fortunes can be mended by mere financial operations—by borrowing with one hand while you pay off with another ; and unquestionably Mr. Pitt never imagined that if the nation was paying off ten millions a year, and borrowing twenty, it was making any progress in the discharge of its debt. In this view, it is of no moment to inquire what proportion of the debt annually contracted was applied to the sinking fund ; because, as long as larger sums than that fund was able to discharge were yearly borrowed by the nation, it is evident that the operation of the system was attended with no *present* benefit to the

State ; nay, that the cost of its machinery was, for the time at least, an addition to its burdens. But, all that notwithstanding, Mr. Pitt's plan for the redemption of the debt was founded *not only on consummate wisdom, but on a thorough knowledge of human nature*. He never looked to the sinking fund as the means of paying off the debt while loans to a larger amount than it redeemed were contracted every year ; he regarded it as a fund which would speedily and certainly effect the reduction of the debt *in time of peace*.

"It was then that its real effect was to be seen ; it was then that the debt contracted during war was to be really discharged. *And the admirable nature of the institution consisted in this, that it provided a system, with all the machinery requisite for its complete and effective operation, which, although overshadowed and subdued by the vast contraction of debt during war, came instantly into operation the moment its expenditure was terminated*. This was a point of vital importance ; indeed, without it, as experience has since proved, all attempts to reduce the debt would have proved utterly nugatory. Mr. Pitt was perfectly aware of the natural impatience of taxation felt by mankind in general, and the special desire always experienced, when the excitement of war ceases, that its expenditure should draw to a termination. He foresaw, therefore, that it would be impossible to get the proper representatives at the conclusion of a war to lay on new taxes and provide for a sinking fund to pay off the debt which had been contracted during its continuance. *The only way, therefore, to secure that inestimable object, was to have the whole machinery constructed and in full activity during war, so that it might at once be brought forward in full and efficient operation upon the conclusion of hostilities, without any legislative act or fresh imposition whatever, by the mere termination of the contraction of loans*.

"From what has now been stated it will readily be discerned in what the grand merit of Mr. Pitt's system consisted. It was the imposition by law of sufficient indirect taxes to meet not only the interest of every new loan, but a hundredth part more to provide a sinking fund for the extinction of its capital, which was its grand distinction. It brought the nation successfully through the crisis of the war, and would have proved the ultimate salvation of the empire if it had been adhered to with the steadiness which he so earnestly impressed upon the nation, and if no sub-

sequent monetary change had rendered impossible the continuance of the indirect taxes necessary to uphold the system. There was neither juggle nor deception in this. It was a very plain and practical operation—viz., *the providing a surplus of taxation to eat in at compound interest on the capital of the debt*. The principle of providing such a surplus is the well-known and indispensable preliminary to every system for the reduction of burdens, whether in public or private. It was in the building upon that foundation the superstructure of a regular, invariable system, and bestowing on it the wonderful powers of compound interest, that Mr. Pitt's great merit consisted. It was the subsequent repeal of the indirect taxes laid on to provide this surplus fund during peace, when there was no necessity whatever for such a measure, and no motive for it but the thirst for temporary applause in successive administrations, which was the real evil which ruined this noble fabric, and has rendered the debt a hopeless burden on the nation. And if any doubt could exist on this subject, it would be removed by recollecting the example of France prior to the Revolution, when the system went on for half a century before that crisis, of borrowing large sums annually and making no provision whatever for payment even of their annual interest, in consequence of which the finances got involved in such a state of hopeless embarrassment as, by rendering the convocation of the States-General unavoidable in a moment of extraordinary excitement, overturned the monarchy.

“The result has completely proved the wisdom of these views. Crippled and mangled as the sinking fund has been by the enormous encroachments made upon it by the administration of later times, it has yet done much during the peace to pay off the debt—amply sufficient to demonstrate the solidity of the principles on which it was founded. In sixteen years which elapsed from 1816 to 1832, even after these copious reductions, it has discharged more than eighty-two millions of the debt, besides the addition of seven millions made by the bonus of five per cent. granted to the holders of the five per cents., who were reduced to four; that is, it has paid off in that time nearly ninety millions. It is not a juggle which (in a time so short in the lifetime of a nation, and during the greater part of which Great Britain was labouring under severe distress in almost all the branches of its industry) was able, even on a reduced scale, to effect a reduction so considerable.

"Not a shadow of doubt can now remain that Mr. Pitt's and Mr. Addington's anticipations were well founded, and that if their system had been adhered to since the peace, the whole national debt would have been discharged by the year 1845.

"Everything, therefore, conspires to demonstrate that Mr. Pitt's system for the reduction of the national debt was not only founded on just principles and profound foresight, but on an accurate knowledge of human nature, a correct appreciation of the principles by which such a salutary scheme was likely to be defeated, and the means by which alone its permanent efficiency could be secured. And no doubt can now remain in any impartial mind, that if that system had been resolutely adhered to, the whole debt contracted during the wars of the French Revolution might have been discharged in little more than the time which was occupied in its contraction.

"When a Greek orator was applauded by the multitude for his speech, the philosopher chid him; 'for,' said he, 'if you had spoken wisely these men would have given no signs of approbation.' The observation is not founded on any peculiar fickleness or levity in the Athenian people, but on the permanent principles of human nature, and that general prevalence of the desire for temporary ease over considerations of permanent advantage, which it is the great object of the moralist to combat, and to the influence of which the greatest disasters of private life are owing. And, without relieving subsequent statesmen of their full share of responsibility *for an evil which will now in the end probably consign the British empire to destruction*, it may safely be affirmed that the British people, and every individual amongst them, must bear their full share of the burden. A general delusion seized the public mind. The populace loudly clamoured for a reduction of taxation, without any regard to the consequences, not merely on future times, but their own present advantage. The learned fiercely assailed the sinking fund, and with hardly a single exception, branded the work of Pitt and Fox *as a vile imposture, incapable of standing the examination of reason or experience*. The Opposition vehemently demanded the remission of taxes; the Government weakly granted the request. Year after year passed away under this miserable delusion; tax after tax was repealed amidst the applause of the whole nation; the general concurrence in the work of destruction for a time almost obliterated the deep lines

of party distinction, and, amidst mutual compliments from the Opposition to the Ministerial benches, the broad foundations of British greatness were loosened; the provident system of former years was abandoned; revenue to the amount of forty millions a year surrendered without any equivalent; and the nation, when it awakened from its trance, found itself saddled for ever with eight-and-twenty millions as the interest of debt, without any means of redemption, and a democratic constitution which rendered the construction of any such in time to come utterly hopeless." (*Alison's History of Europe*, vol. ix., p. 278.)

Now, the above quotation reveals how cruelly and how foolishly the English nation has treated inventive genius, even when it has been adorned by that which, in the eyes of an Englishman, is positively charming and enchanting—viz., aristocratic rank dedicated to the service of England in the duties of a statesman. From this we may conclude how prone the English nation is to neglect and to persecute inventive genius. It is well known that France and America have given much more money and honour to men of talent and to inventors, than England has done (the condition of their wealth and circumstances being carefully considered). But is not this a disgrace to England? Most certainly it is. And it is the duty of those who do not wish to see England distanced by France and America in the race for what is valuable in the eyes of nations, to shame Englishmen into greater consideration for inventors.

Let us see what England's prejudice against Pitt's sinking fund has cost the nation.

From 1833 to 1882, the cost of Civil Government was £712,986,835; of Army and Navy was £1,135,654,246; of National Debt was £1,412,312,726. Pitt's sinking fund would have completely and perfectly paid off the National Debt by 1845. So that the nation has lost, by not following Pitt's plan, about (£1,100,000,000) eleven hundred millions of pounds sterling. In fact, it is a good deal more than this if the thing be intricately examined. Let the amount of annual interest for National Debt be accepted as 28,000,000 a year. Then take 1845 from 1882, and 37 remain; multiply this by 28,000,000, and the result is 1,036,000,000. To this add the amount of the National Debt in 1845, viz., 766,000,000, and we obtain the enormous number of £1,802,000,000, or eighteen hundred and two millions of pounds sterling, as the sum which the British nation has been fined for treating Pitt's sinking fund

machinery with scorn and derision. And the nation has most certainly lost several sums as large as this for treating other inventors with scorn and derision. Truly the words of Holy Writ may be applied to England—"Your sins have withholden good things from you."

The spirit which has animated Englishmen in their treatment of inventors is pretty vividly set forth in the following celebrated letter of the great lexicographer Dr. Johnson, in which the rich and courtly Lord Chesterfield is justly scourged for his cruel neglect of a man of inventive literary genius, whom it was certainly his duty to assist :—

"February 7th, 1755.

"MY LORD,—I have been lately informed by the proprietor of the 'World' that two papers, in which my 'Dictionary' is recommended to the public, were written by your lordship. To be so distinguished is an honour, which, being very little accustomed to favours from the great, I know not well how to receive, or in what terms to acknowledge.

"When, upon some slight encouragement, I first visited your lordship, I was overpowered, like the rest of mankind, by the enchantment of your address, and could not forbear to wish that I might boast myself *le vainqueur du vainqueur de la terre*;—that I might obtain that regard for which I saw the world contending; but I found my attendance so little encouraged, that neither pride nor modesty would suffer me to continue it. When I had once addressed your lordship in public, I had exhausted all the art of pleasing which a retired and uncourtly scholar can possess. I had done all that I could; and no man is well pleased to have his all neglected, be it ever so little.

"Seven years, my lord, have now passed since I waited in your outward rooms, or was repulsed from your door; during which time I have been pushing on my work through difficulties, of which it is useless to complain, and have brought it at last to the verge of publication, without one act of assistance, one word of encouragement, or one smile of favour. Such treatment I did not expect, for I never had a patron before.

"The shepherd in Virgil grew at last acquainted with love, and found him a native of the rocks.

"*Is not a patron, my lord, one who looks with unconcern on a man struggling for life in the water, and, when he*

has reached ground, encumbers him with help? The notice which you have been pleased to take of my labours, had it been early, had been kind; but it has been delayed till I am indifferent, and cannot enjoy it; till I am solitary, and cannot impart it; till I am known, and do not want it. I hope it is no very cynical asperity not to confess obligations where no benefit has been received, or to be unwilling that the public should consider me as owing that to a patron which Providence has enabled me to do for myself.

"Having carried on my work thus far with so little obligation to any favourer of learning, I shall not be disappointed though I should conclude it, if less be possible, with less; for I have been long awakened from that dream of hope, in which I once boasted myself with so much exultation, my lord—your lordship's most humble, most obedient servant—SAM JOHNSON."

The domain of literature presents many illustrations of the cruelty and crass stupidity of which inventors have been the victims. The "Song of the Shirt" by the celebrated Hood is an invention of a high order. But how was its inventor treated? Thomas Hood wrote the "Song of the Shirt" some time in 1831 or 1832. He read it over to his wife, who praised it very highly, declaring that it was the best thing he ever wrote. Overjoyed at receiving such an opinion from one of the very best of critics, he sent it, the very next day, to the editor of a leading newspaper. It was rejected as utterly and completely unsuitable. Rather crestfallen, he sent it to a second editor, who declared it would be quite improper for him to insert such a production in his paper. Almost hopeless, he sent it to a third, who emphatically rejected it. Utterly disgusted, he locked it up, hating the very thought of it. About twelve years after, when the manuscript was old and yellow, Mark Lemon, the editor of *Punch*, asked Hood if he could not give him a contribution. Hood said he was sorry that he had nothing but an old wretched poem entitled the "Song of the Shirt," the manuscript of which was probably now old and yellow. He also said that it had been rejected by so many editors, that he was sick of the very thought of it. Mark Lemon asked to see it. He read it, and approved of it. He took it away, resolving to insert it in *Punch*. But he had first to consult his colleagues. These sages all opposed its insertion in the columns of *Punch*. The matter was warmly debated,

And Lemon had to fight a great battle in argument. But, by dint of unconquerable perseverance, his colleagues were compelled to give in. The "Song of the Shirt" was inserted in *Punch* on the 16th of December, 1843, and it immediately trebled the circulation of the paper. It drew tears from the eyes of princes. Some years afterwards, when Tom Hood was dead, the nation erected a monument over his grave. On the tombstone are the words—"He sang the Song of the Shirt."

Now, the above true fact shows very plainly the kind of treatment which inventive genius of the highest order receives from well-meaning but unwise publishers. Be it observed that when Tom Hood first offered his "Song of the Shirt" to editors, he was by no means unknown to fame. He was in fact near the very zenith of his fame, being known as one of the most brilliant writers of the day. If an established author had his best and most original production condemned by the best publishers, we may readily conjecture that the number of less well-known authors who have been as badly treated may probably be legion. How many valuable productions of the pen, capable of benefiting mankind in an incalculable degree, have been thus murdered, the Almighty alone knows! The "Song of the Shirt" was first offered to editors in 1831 or 1832, but it was not published till 1843, so that it was neglected for ten or eleven years. Few original compositions can outlive such cruelty.

The whole of this pamphlet is written with a view to show the folly and the madness of every act of cruelty done to inventive genius, in order that Britain may, even at the eleventh hour, repent of such cruelty, and begin now to treat inventors with unusual kindness, according to the law—"She to whom much is forgiven, the same will love much."

Cruelty of any kind recoils sooner or later upon its perpetrator. This is as true of nations as it is of individuals. And history abounds with striking illustrations. For instance, the ancient emperors of Peru were rulers noted for sagacity and selfishness. They knew how to do a 'cute and clever thing or two. Their land abounded in gold. And they were passionately fond of gold. They therefore made a law that every one of their subjects who could find any gold in his fields or hills or rivers, was to make it over to the emperor, on pain of death. The Government of

Peru was absolutely despotic, the emperor having the power of life and death over all his subjects.

This law about gold was therefore very carefully followed, though with many a pang. The consequence was that boundless wealth was poured into the coffers of the emperors. These ancient Yankees were 'cute fellows. They knew a thing or two. 'Cuteness is not an invention of the modern American. It existed in ancient times in the Western Hemisphere. Great is the power of the modern American to become a millionaire, but greater was the power of the ancient American. Now, there is nothing wrong in becoming a millionaire, provided only the money accumulated be honestly and justly come by. But were the Incas just in their method of amassing gold? Will their method of amassing gold stand the test of the golden rule? If the whole of history be ransacked, a parallel to the coolness of such fiendish selfishness and rapacity cannot be found. Was there then no punishment for such iniquity? There was. And if the coolness of such selfishness almost staggers us and takes our breath away, the extraordinary character of the punishment does the same. It is a true law which declares that we can never learn how to be kind to ourselves, unless we first learn how to be kind to others. The mode of our treatment of others will, by an everlasting law, become sooner or later the mode of our treatment of ourselves. Men try very hard to put the cart before the horse in religion, politics, and morals. But they never succeed. The Incas tried it, but failed miserably. Having "*framed iniquity by a law,*" for the purpose of unjustly robbing their subjects of gold, they could not stop until they had "*framed iniquity by a similar law,*" for the purpose of unjustly robbing themselves of gold. And the law which they made for the latter purpose was this. They enacted that when an Inca or Emperor died, all his palaces, except one, with all their gold and silver ornaments, were to be closed and walled up for ever. No gold and silver in a palace at the time of death was to be abstracted after the death of the emperor. His successor had thus to begin the world without deriving the slightest advantage from the accumulated wealth of his ancestors. This illustrates the law that we can never really learn how to be kind to ourselves, until we first learn how to be kind to others. The cruelty of the Incas recoiled upon their own heads. And the

cruelty of Great Britain to her inventors, with equal certainty, recoils upon her.

This cruelty of the Incas to their subjects furnished an excellent method of collecting gold for the Spaniards. For that latter gold-loving nation had only to open the walled-up palaces of the Incas to find as much gold as they wanted.

The Spaniards, however, became in their turn a beacon to warn nations of the inevitable character of retribution. They afterwards almost annihilated the native races, by working them to death in the gold mines. But this blood-stained gold had no blessing in it. It was put on board ships. But a large portion of it never reached Spain. Storms and English ships sent much of it to the bottom of the sea, where it lies stored up for the use of some race more merciful and more just than the Spaniards.

But not only has the Almighty made a law by which nations and individuals are compelled to reap the fruits of the seed which they sow, but He also, by His providence, intensifies, reduplicates, and hastens the operation of that law, in a way which makes the ears of all who hear to tingle.

Columbus, as is well known, had a dreadful amount of cruelty and neglect to endure before he obtained funds to enable him to discover America. This cruelty reflects the very greatest discredit on the countries which inflicted it, and every one of them has, since his time, sunk into well-merited poverty, shame, and degradation—a warning to those nations which are at the present time great, lest they also, by similar cruelty, fall into similar degradation. As Washington Irving, in his magnificent "Life of Columbus," truly says: "Like many other great projectors, while engaged upon schemes of vast benefit to mankind, he had suffered his own affairs to go to ruin, and was reduced to struggle hard with poverty; nor is it one of the least interesting circumstances in his eventful life, that he had, in a manner, *to beg his way from court to court, to offer to princes the discovery of a world.*"

King John, ardently devoted to maritime discovery, was the monarch who reigned in Portugal in the days of Columbus. To his court Columbus came, begging for a fleet to enable him to make his grand discovery. The charts, diagrams, and plans were all laid before the king, who was exceedingly inclined to approve of them as correct. But, to make assurance doubly sure, the king laid

them before his council. Diego Ortiz de Casadilla, bishop of Ceuta, a man greatly reputed for his learning, advised the king secretly to hand over Columbus's charts and plans to one of the most sagacious Portuguese captains, to supply that captain with a large ship and a good crew, and to order him to sail to the west, following Columbus's plans carefully. Should India be discovered, the king could claim the glory and the country. Should nothing be discovered, the king would then decline to help Columbus.

All this diabolical injustice was perpetrated upon the great Columbus by the king, acting upon the advice of a respected bishop! One of the best of Portugal's captains was, with great cunning and secrecy, dispatched in one of the best of Portugal's ships, and he was provided with copies of all Columbus's plans and charts. But God cursed the expedition, and covered its perpetrators with everlasting shame and disgrace. Though the captain had full copies of every one of Columbus's diagrams, there was one thing which the king had rather foolishly forgotten to give him, and that was Columbus's spirit. A lion animated with the spirit of an ass is rather a sorry sight. When the captain had sailed about two thousand miles to the west, he found nothing but a wild immeasurable waste of tumbling waters before him. Then the want of Columbus's hopeful spirit became apparent. Inventors, projectors, and all that ilk, are frequently taxed with the want of hard, sound, solid, common sense, and with a tendency to indulge in fanciful, chimerical, and fallacious hopes and expectations. Good, hard, common sense doubtless has its province, and is useful in certain circumstances, but not in all. A vivid imagination, and a strong fervour of hope, have often done more good to mankind than what is frequently so highly praised as sound common sense. And the Portuguese captain was now to prove the truth of this. For having none of Columbus's hope to buoy up his spirit, he became frightened, returned to Spain, and ridiculed the project of Columbus as extravagant and irrational. But this awful act of cruelty could not be concealed. Columbus heard of it. Everybody heard of it. And Columbus, filled with unspeakable indignation, shook off the dust of his feet against Portugal. A greater than Columbus had watched the expedition, and had resolved to inflict on its guilty projectors a weight of punishment a thousand times more terrible than the denunciations of Columbus could do. That poor despised adventurer in due time got ships from Spain, sailed west,

made his great discovery, and mark what followed. A storm arose as he was nearing Spain, which drove his ship, much against his will, up the Tagus, not far from the place where the court then was. So that the first monarch who heard that Columbus had discovered a new world with boundless wealth, which, in the excited state of men's minds, was multiplied a million times above its actual value, was the King of Portugal. All this wealth, and all this glory, were being laid at the feet of the King of Spain, who was the most hated of Portugal's enemies.

"When the tidings reached Lisbon of Columbus's bark, anchored in the Tagus, freighted with the people and productions of a newly-discovered world, the effect may be more easily conceived than described. Lisbon, for nearly a century, had derived its chief glory from its maritime discoveries; but here was an achievement that eclipsed them all. Curiosity could scarcely have been more excited had the vessel come freighted with the wonders of another planet. For several days the Tagus presented a gay and moving picture, covered with boats and barges of every kind, swarming round the caravel. From morning till night the vessel was thronged with visitors, among whom were cavaliers of high distinction, and various officers of the crown. All hung with rapt attention upon the accounts given by Columbus and his crew of the events of their voyage, and of the new world they had discovered, and gazed with insatiable curiosity upon the specimens of unknown plants and animals; but, above all, upon the Indians, so different from any race of men hitherto known. Some were filled with generous enthusiasm at the idea of a discovery so sublime and so beneficial to mankind; the avarice of others was inflamed by the description of wild, unappropriated regions, teeming with gold, with pearls and spices; *while others repined at the incredulity of the king and his councillors, by which so immense an acquisition had been for ever lost to Portugal.*

"On the 8th of March a cavalier, called Don Martin de Noroña, came with a letter from King John congratulating Columbus on his arrival and inviting him to the court, which was then at Valparaiso, about nine leagues from Lisbon. The king, with his usual magnificence, issued orders at the same time that everything which the admiral required for himself, his crew, or his vessel, should be furnished promptly and abundantly without cost.

"Columbus would gladly have declined the royal invita-

tion, feeling distrust of the good faith of the king, but tempestuous weather had placed him in his power, and he thought it prudent to avoid all appearance of suspicion. He set forth, therefore, that very evening for Valparaiso, accompanied by his pilot. The first night he slept at Sacamben, where preparations had been made for his honourable entertainment. The weather being rainy, he did not reach Valparaiso until the following night. On approaching the royal residence, the principal cavaliers of the king's household came forth to meet him, and attended him with great ceremony to the palace. His reception by the monarch was worthy of an enlightened prince. He ordered him to seat himself in his presence, an honour only granted to persons of royal dignity, and after many congratulations on the result of his enterprise, assured him that everything in his kingdom that could be of service to his sovereign or himself was at his command.

"A long conversation ensued, in which Columbus gave an account of his voyage, and of the countries he had discovered. *The king listened with much seeming pleasure, but with secret grief and mortification, reflecting that this splendid enterprise had once been offered to himself, and had been rejected.* A casual observation showed what was passing in his thoughts. . . . Some of the councillors round King John, who were now compelled by irresistible evidence to admit the discovery made by Columbus, were the very persons who had once derided the enterprise and scoffed at him as a dreamer. *To them, its success was a source of confusion; and the return of Columbus, covered with glory, a deep humiliation.*" ("Life of Columbus," by Washington Irving, pages 34 and 158.)

The above facts, clothed in the glowing words of Washington Irving, show the kind of punishment which is often inflicted on those who deride new ideas as idle fancies, and their promulgators as idle dreamers. They also reveal the still more severe punishments which often overwhelm those who dare to persecute the men who originate theories and projects of a novel character, merely because they are poor.

Connected with Columbus's return to Spain there is, however, a still more terrible case on record of the folly and madness of attempting to rob the successful asserter of a new method, a new invention, or a new discovery, of his glory. I refer to the case of Martin Alonzo Pinzon.

"The triumphant return of Columbus was a prodigious

event in the history of the little port of Palos, where everybody was more or less interested in the fate of his expedition. The most important and wealthy sea captains of the place had engaged in it, and scarcely a family but had some relative or friend among the navigators. The departure of the ships, upon what appeared a chimerical and desperate cruise, had spread gloom and dismay over the place, and the storms which had raged throughout the winter had heightened the public despondency. Many lamented their friends as lost, while imagination lent mysterious horrors to their fate, picturing them as driven about over wild and desert wastes of water without a shore, or as perishing amidst rocks, and quicksands, and whirlpools, or a prey to those monsters of the deep with which credulity peopled every distant and unfrequented sea. There was something more awful in such a mysterious fate than in death itself, under any defined and ordinary form.

"Great was the agitation of the inhabitants, therefore, when they beheld one of the ships standing up the river, but when they learnt that she returned in triumph from the discovery of a world, the whole community broke forth into transports of joy. The bells were rung, the shops shut, all business was suspended; for a time there was nothing but hurry and tumult. Some were anxious to know the fate of a relative, others of a friend, and all to learn the particulars of so wonderful a voyage. When Columbus landed, the multitude thronged to see and welcome him, and a grand procession was formed to the principal church to return thanks to God for so signal a discovery made by the people of that place—forgetting, in their exultation, the thousand difficulties they had thrown in the way of the enterprise. Wherever Columbus passed he was hailed with shouts and acclamations. What a contrast to his departure a few months before, followed by murmurs and execrations; or rather, what a contrast to his first arrival at Palos, a poor pedestrian, craving bread and water for his child at the gate of a convent.

"It is a singular coincidence, which appears to be well authenticated, that on the very evening of the arrival of Columbus at Palos, and while the peals of triumph were still ringing from its towers, the *Pinta*, commanded by Martin Alonzo Pinzon, likewise entered the river. After her separation from the admiral in the storm she had been driven before the gale into the Bay of Biscay and had made the port of Bayonne. Doubting whether Columbus had

survived the tempest, Pinzon had immediately written to the sovereigns, giving information of the discovery he had made, and had requested permission to come to court and communicate the particulars in person. As soon as the weather permitted he had again set sail, anticipating a triumphant reception in his native port of Palos. When, on entering the harbour, he beheld the vessel of the admiral riding at anchor, and learnt the enthusiasm with which he had been received, the heart of Pinzon died within him. It is said that he feared to meet Columbus in this hour of his triumph, lest he should put him under arrest for his desertion on the coast of Cuba ; but he was a man of too much resolution to indulge in such a fear. It is more probable that a consciousness of his misconduct made him unwilling to appear before the public in the midst of their enthusiasm for Columbus, and perhaps he sickened at the honours heaped upon a man whose superiority he had been so unwilling to acknowledge. Getting into his boat, therefore, he landed privately, and kept out of sight until he heard of the admiral's departure. He then returned to his home, broken in health and deeply dejected, considering all the honours and eulogiums heaped upon Columbus as so many reproaches on himself. The reply of the sovereigns to his letter at length arrived. It was of a reproachful tenor, and forbade his appearance at court. This letter completed his humiliation ; the anguish of his feelings gave virulence to his bodily malady, and in a few days he died, a victim to deep chagrin.

"Let no one indulge in harsh censures over the grave of Pinzon! His merits and services are entitled to the highest praise ; his errors should be regarded with indulgence. He was one of the foremost in Spain to appreciate the project of Columbus, animating him by his concurrence, and aiding him with his purse, when poor and unknown at Palos. He afterwards enabled him to procure and fit out ships when even the mandates of the sovereigns were ineffectual, and finally embarked in the expedition with his brothers and his friends, staking life, property, everything upon the event.

"He thus entitled himself to participate largely in the glory of this immortal enterprise ; but unfortunately, forgetting, for a moment, the grandeur of the cause, and the implicit obedience due to his commander, he yielded to the incitements of self-interest, and committed that act of insubordination which has cast a shade upon his name.

In extenuation of his fault, however, may be alleged his habits of command, which rendered him impatient of control, his consciousness of having rendered great services to the expedition, and of possessing property in the ships. That he was a man of great professional merit is admitted by all his contemporaries; that he naturally possessed generous sentiments and an honourable ambition is evident from the poignancy with which he felt the disgrace drawn on him by his misconduct. A mean man would not have fallen a victim to self-upbraiding for having been convicted of a mean action. His story shows how one lapse from duty may counterbalance the merits of a thousand services; how one moment of weakness may mar the beauty of a whole life of virtue; and how important it is for a man, under all circumstances, to be true, not merely to others, but to himself." (Washington Irving's "Life of Columbus," page 164.)

Now, I fear that the verdict passed upon Pinzon is that which must be passed upon Britain, viewed as an encourager of inventors. Britain has done much for invention. Were not the steam-engine, the railway, the steamboat, and the telegraph all British inventions? Of course they were. Britain has done much for inventors. But she has not done enough. To be almost saved is to be completely lost. Has not England done much by her philanthropic efforts to bless and benefit the poor? Most certainly she has. But she has not done enough. Had she done enough, it would not have been possible for "The Bitter Cry of Outcast London" to be written. Had she done enough, it would not have been possible for the harrowing and heartrending facts therein stated to be proved, not only true, but under the truth. "Not every one that saith unto me, Lord, Lord, shall enter into the kingdom of heaven; but he that doeth the will of my Father which is in heaven. Many will say to me in that day, Lord, Lord, have we not prophesied in thy name? and in thy name have cast out devils? and in thy name done many wonderful works? And then will I profess unto them, I never knew you; depart from me, ye that work iniquity" (Matthew vii. 21). Now this passage, though intended chiefly to reveal the awful consequence arising from insufficient effort regarding the salvation of the soul, yet furnishes a splendid illustration of the bitter nature of the evil I am now denouncing. These unhappy souls, who were excluded from the joys of heaven, had done a good many religious acts. They had

even cast out devils in Christ's name. But because they had not done the one thing needful—because they had not believed in Christ, they were ruined eternally. Similarly, England does much to foster invention. She does some very wonderful things. But there is a one thing needful which she seems determined not to do. And therefore the inventive skill of Britain seems in danger of total ruin. Within a very few years, if Britain does not amend her ways, the rise of a really useful inventor among her sons will become as impossible as the rise of a Columbus is now in the despicable and degraded political cesspools of Spain and Portugal. "Therefore whosoever heareth these sayings of mine, and doeth them, I will liken him unto a wise man which built his house upon a rock: And the rain descended, and the floods came, and the winds blew, and beat upon that house; and it fell not; for it was founded upon a rock. And every one that heareth these sayings of mine, and doeth them not, shall be likened unto a foolish man, which built his house upon the sand: And the rain descended, and the floods came, and the winds blew, and beat upon that house; and it fell: and great was the fall of it."

The above passage, though primarily intended to describe the folly of those who build their hopes of salvation on any other foundation but the rock Christ, is also at the same time the best that could be thought of to set forth the folly of England's conduct relating to invention. England has a fine patent law. And she makes a fine thing out of patent fees. And if an inventor occasionally succeeds in making a very large sum by his patent, England loads him with honour. Her house has a fine appearance doubtless. But notwithstanding its fine appearance, it is built on sand, not on rock. The extremely wicked can do as much for their victims as Britain does for her inventors. The harlot for instance pays great attention to the rich. But the mark of destruction is upon her, because she never succours the perishing orphan. So, unless England will assist inventors when they are poor and struggling, the load of her favours bestowed on a few of the successful inventors will continue to be little better than mockery.

The way in which judgment will probably overtake the country will be this—the *apparent* excellence of inventive talent in the country will increase both in quality and quantity, while the *really* excellent inventive talent in the country will diminish both in quality and quantity until it

leaves the shores of Britain altogether; after which the advent of Macaulay's New Zealander to the ruins of London Bridge will not be long delayed. It is astonishing how often this sort of punishment overtakes a nation. For instance, if a stranger had visited England thirty years ago, he would have declared that England was, above all things, a religious nation. But what was the quality of that religion? Let one single fact explain. About thirty or thirty-five years ago the great Spurgeon was in deep religious distress. He was visiting church after church in the hope of hearing a sermon which could show him what he required to do to be saved. And he did *not* hear such a sermon. The thing is almost incredible; but he tells us so himself. Week after week, and month after month, he visited church after church in the hope of finding the road to heaven. And he failed, because none of the preachers that he listened to preached a sermon which gave him the necessary instruction. At last, when hope was almost failing, he met with an accident. A terrific snowstorm prevented him from going to hear the celebrated minister he had resolved to listen to, and drove him instead, into an out-of-the-way, paltry little Methodist chapel, where he heard a sermon which informed him that all he required to do in order to obtain the salvation of his soul was simply to look to Christ by faith, as the Jews looked by faith to the brazen serpent. This at once brought light and peace to his mind. His search was ended; but after how long and how wearisome a seeking! This shows that while there may be in a country the most extraordinary superabundance of the appearance of religion, there may, at the very same time, be an incredibly small amount of the power and comfort which nothing but true religion can bring. Similarly, there is, at the present time, an enormous amount of the appearance of inventive skill in England, with an astounding absence of its reality.

England is steeped to the lips in misery because inventions are not made which ought to be made, and which would be made, if only inventors got the encouragement which they have a right to expect. And if the present neglect of inventors goes on, it will soon be as impossible for a great inventor to arise in England as it is for a genius like Columbus to arise in Spain and Portugal.

Everything which leads to this deplorable result should be carefully removed. I have already indicated national stin-giness as one great cause. But there is another very nearly

as powerful, but by no means so apparent. That other cause is *envy*. Envy sold Joseph into Egypt as a dreamer. And the people who sold him were his own brothers. Envy is the rottenness of the bones. Envy corrodes the bones of Englishmen. English inventors are sold as dreamers into misery by their own countrymen. If they are not allowed to realise their dreams their countrymen starve. If they do realise their dreams, their countrymen are, like the opponents of Columbus, covered with shame and confusion. All this misery and disgrace might be avoided by their countrymen ceasing to envy them, and beginning to love and assist them. Englishmen do not know how prone their nation is to envy. But historians do not fail to detect the national vice. Alison, for instance, says, "Persecution of its most illustrious citizens, of the greatest benefactors of their country, has ever been the disgrace of free States. The sacrifice of Sir Robert Calder, who saved England from Napoleon's invasion ; of Lord Melville, who prepared for it the triumph of Trafalgar ; of the Duke of York, who laid the foundation of Wellington's victories ; the impeachment of Clive, who founded, by heroic deeds, the British empire in the East ; of Warren Hastings, who preserved it by moral determination, prove that the people of this country are sometimes governed by the same principles which caused Miltiades to die in the prison of the country he had saved, consigned Themistocles to Asiatic exile, banished Aristides because it was tiresome to hear him called the Just, and doomed Scipio Africanus, the conqueror of Carthage, to an unhonoured sepulchre in a foreign land. *Envy is the real cause of all these hideous acts of national injustice ; people would rather persecute the innocent than bear their greatness.*" (Alison's History of Europe, vol. ix., p. 32.)

And the same talented historian condemns, in equally strong language, the foolish and unwise injustice of England to her greatest men. "The life of Wellington presents a memorable example of the well-known truth, that real greatness in public life has rarely been attained save by those who, at one period, have resolutely acted in opposition to the opinions and clamours of the great body of the people ; and that not unfrequently the deeds of their life which have given them the most durable reputation with posterity, are those which have occasioned the most violent outcry and obloquy at the moment." (Alison, vol. xiii., page 295.)

Holy Writ declares that the patriarchs, moved with envy, sold Joseph into Egypt, and that this loathsome vice did not spare even incarnate Deity. "*For Pilate knew that the chief priests had delivered Christ to him for envy.*" "He perceived that they had delivered him because he had got such a reputation among the people as eclipsed theirs. It was easy to see that it was not his guilt, but his goodness, not anything mischievous or scandalous, but something meritorious and glorious that they were provoked at. And therefore, hearing how much he was the Darling of the crowd, Pilate thought that he might with safety appeal from the priests to the people, and that they would be proud of rescuing him out of the priests' hands; and he proposed an expedient for their doing it without danger of an uproar; let them demand him to be released, and Pilate will readily do it and stop the mouths of the priests with it—that the people insisted upon his release. There was, indeed, another prisoner, one Barabbas, that had an interest, and would have some votes; but Pilate questioned not but Jesus would out-poll him.

"It was a great surprise to Pilate when he found the people so much under the influence of the priests, that they all agreed to desire that Barabbas might be released. Pilate opposed it with all his might. What will ye that I shall do to him whom ye call the King of the Jews? Would not ye then have him released too? No, say they, crucify him. The priests having put that in their mouths, they insist upon it; when Pilate objected, *Why, what evil has he done?* (a very material question in such a case) they do not pretend to answer it, but cried out the more exceedingly, as they were more and more instigated and irritated by the priests, *Crucify him, crucify him.* Now the priests, who were very busy dispersing themselves and their creatures among the mob, to keep up the cry, promised themselves that it would influence Pilate in two ways to condemn him. 1. It might incline him to believe Christ guilty, when there was so general an outcry against him. 'Surely,' might Pilate think, 'he must needs be a bad man, whom all the world is weary of.' He would now conclude that he had been misinformed about Christ having an interest in the people. 2. It might induce him to condemn Christ to please the people, and indeed for fear of displeasing them. Though he was not so weak as to be governed by their opinion, to believe him guilty, yet he was so wicked as to be swayed by their outrage, to condemn him though he

believed him innocent ; induced thereto by reasons of state and the wisdom of this world." (Scott and Henry's Commentary.)

Now, inasmuch as envy sold Joseph into Egypt, and crucified Christ, we may affirm that no vice has done so much injury to the world's benefactors as envy. It is envy which has kept many an inventor from being a blessing to others and to himself. In nothing are our present systems of education so senselessly, so shamefully, so flagrantly defective as in this—that they do absolutely nothing to eradicate the seeds of envy from the minds of the young. On the contrary, they do much to cause them to germinate and thereby to breed untold national sorrow and untold national calamity.

There is a strong but fiendish tendency both in wicked nations and in wicked individuals, to think that after they have got from those by whose labours they have been benefited all that they can get, they may with impunity abandon such helpers. After an inventor, for instance, has been tempted to make his invention public by buying a patent, the nation apparently seems to think that it is not beneficial to the State that he should receive any aid to enable him to surmount the colossal obstacles placed in the way of his deriving any pecuniary advantage from his invention.

All history shows that such conduct is as suicidal as it is unjust. An avenging Providence is very careful to take note of such acts, and punish them with startling severity. The following episode in the Life of Napoleon powerfully illustrates this :—"There were in 1810 not less than fifty thousand French prisoners in Great Britain ; and after erecting, at an enormous expense, several vast structures for their habitation, particularly one at Dartmoor in the south of England, and two in Scotland, the latter each capable of containing six or seven thousand men, the Government were under the necessity of confining great numbers in the hulks and guard-ships. The detention of soldiers in such a situation was made the subject of loud and frequent complaint by the French Emperor, who said in the *Moniteur* 'that by a refinement of cruelty, the English Government sent the French soldiers on board the hulks, and the sailors into prisons in the interior of Scotland.' With his usual unfeeling disposition, however, to those whose services could no longer be made available, he not only resisted every proposal for an exchange of

prisoners on anything approaching to reasonable principles, *but never remitted one farthing for their maintenance.* He thus left the whole helpless multitude to starve, or be a burden on the British Government, which, on the contrary, regularly remitted the whole cost of the support of the English captives in France to the Imperial authorities. Notwithstanding Napoleon's cruel neglect, however, the prisoners were surprisingly healthy, there being only 321 in hospital out of 45,939 in confinement, while out of 2,710 who enjoyed their liberty on parole, no less than 165 were on the sick list. The great dépôt of French prisoners in Scotland, which Napoleon held out as so deplorable a place of detention, was a noble edifice, erected at a cost of nearly £100,000 in a beautiful and salubrious situation near Perth, on the Tay, which, after being for twenty-five years unoccupied, was in 1839 converted by the Government, on account of its numerous advantages, into a great central jail for criminals. It contained 7,000 prisoners; and so healthy was the situation, and substantial was the fare and lodging they had received, that of this great number only from five to six died annually; a smaller mortality than that among any equal body of men in any rank in Europe going about their usual avocations. That in England was equally healthy. At Dartmoor dépôt in 1812, out of 20,000 prisoners there were only 300 sick, or 1 in 66; a proportion much above the average health of persons at large." (Alison, xiv. 104.)

Many act as if Napoleon's cruel policy in the above case were wiser than Britain's juster and more humane policy. But the event proved that Napoleon was completely in the wrong, and Britain completely in the right. So Britain's present cruel policy towards inventors may seem to some wise. But solitary confinement on Helena's rock is a fit emblem of what the fruit of that policy is likely to be.

We denounce the cruelties of war, and justly so. But the cruelties perpetrated on inventors in England are more painful than the cruelties of war. An inventor's heart broken by the cruelty to which that wretched class are subject in England is harder to bear and harder to heal than a soldier's arm broken in war. Moreover the wrongs perpetrated on inventors are more criminal than the wrongs perpetrated by war, because it is much easier to avert and avoid the former than the latter. All Englishmen howl

with indignation when they read such descriptions of the cruel fruits of warlike ambition as the following passage from a great historian :—

“ The agitation in the beginning of January, 1813, in Berlin daily became more violent. Every successive arrival from the French army brought fresh accounts of the accumulated disasters it had undergone in the awful Russian campaign of the previous year ; and at length the appearance of the woe-stricken fugitives who entered, the precursors of the corpse-like mutilated bands who followed, left no doubt that an unheard-of catastrophe had occurred. Forster writing to Korner says—‘ On Sunday forenoon last I went to one of the gates, and found a crowd collected round a car, in which some wounded French soldiers had just returned from Russia. No grenade or grape could have so disfigured them as I beheld them, the victims of the cold. One of them had lost the upper joints of all his ten fingers, and he showed us the stumps ; another looked as if he had been in the hands of the Turks—he wanted both ears and nose. More horrible was the look of a third whose eyes had been frozen ; the eyelids hung down rotting, the globes of the eyes were burst, and protruding from their sockets. It was awfully hideous ; but a spectacle more horrible still was to present itself. Out of the straw, in the bottom, I now beheld a figure creep painfully, which one could scarcely believe to be a human being, so wild and distorted were the features ; the lips were rotted away, the teeth stood exposed. He pulled the cloth from before his mouth, and grinned on us like a death’s head : then he burst out into a wild laughter, gave the word of command in broken French, with a voice more like the bark of a dog than anything human, and we saw that the poor wretch was mad—mad from a frozen brain ! Suddenly a cry was heard, “ Henry ! my Henry ! ” and a young girl rushed up to the car. The poor lunatic rubbed his brow at the voice, as if trying to recollect where he was ; then he stretched out his arms towards the distracted girl, and lifted himself up with his whole strength. But it was too much for his exhausted frame ; a shuddering fever fit came over him, and he sank lifeless on the straw.’ Such are the dragon teeth of woe which the Corsican Cadmus has sown.” (Alison’s History of Europe, vol. xvi., page 103.)

Terrible is the indignation which such facts awaken in

the breast of every feeling man. Not unjustly do the following lines condemn such abominations :—

“Opprobrious war, abominable shame !
 Devis'd by demons in their lust for fame !
 Sure, th' Almighty carnage ne'er designed !
 Sure, God in war delight can never find !
 The burning homes, the blood-stained trampled ground
 The torture and the pain, the cruel wound !
 The widow's tears, the orphan's bitter wail !
 THE LOVER'S VOW WHICH THOU DOST MAKE TO FAIL !
 The sad demoralising slavery !
 With as corrupting brutal tyranny !
 These are thy virtues, bloody, fiendish war !
 That land and sea with gore and death dost mar !
 Not in the pomp and tramp of armies large,
 Not in ambition's martial, gory charge,
 Is valour true and lasting to be found ;
 'Tis born of things that humbler scenes surround.
 He who courageous is to search for truth
 In spite of violence or treach'rous ruth,
 Or hostile power, or dogmatism's pride ;
 Who helps the just, though poor and feeble side,
 In teeth of persecution's scorn and wrath,
 And all the dreadfulness that rack or dungeon hath ;—
 In brief, who boldly does whate'er is right,
 In spite of consequences dark as night,
 Possesses intrepidity most bright,
 Possesses valour in Jehovah's sight.”

Terrible, however, as are the wrongs which war inflicts on humanity, the wrongs inflicted on mankind by nations neglecting and persecuting inventors are greater still. There is no better way of developing the resources of a country than by encouraging inventors. Every legitimate means of increasing wealth counteracts the attraction of illegitimate means. If kings could only see the extraordinary wealth which the encouragement of inventors pours into their kingdoms, they would loathe the blood-stained and most uncertain wealth which war brings them. When a man is well fed he loathes carrion ; but starve him, and he will devour even carrion greedily. So, show kings not only the wealth, but the glory which the encouragement of inventors confers on their country, and they will loathe the carrion wealth, and the carrion glory which war confers. The sin of crucifying inventors consists chiefly in this,—that kings are thereby prevented from believing that there is any way of acquiring national glory and national wealth but by war. It is the old story of Satan striving by every means in his power to render legitimate marriage difficult, painful, miserable, unhappy and forbidding, in order that the charms and snares of the filthy harlot may be made to

assume a bright, attractive, and enchanting appearance, so that a large number of souls may be slain in the shambles of hell.

Inventors are now treated worse than they were in ancient times. The treatment accorded to them in ancient times was barbarous cruelty : the treatment accorded to them now is refined cruelty. Beckwith, in his magnificent work entitled "The History of Inventions," tells us that a Roman invented a method of rendering glass elastic. Overjoyed, he went to the Emperor Tiberius to reveal his secret and obtain a reward. That cruel monster, who disgraced the Roman throne, immediately beheaded him, lest his invention should injure the trade of the glass-blowers of Rome. To this day no one has since invented a method of rendering glass elastic. It would almost seem as if God determined thereby to punish the cruelty of man by never a second time allowing an invention to be reinvented, if the individual who first invented it had been cruelly treated. Now, the devilish cruelty of Tiberius may justly be stigmatised as *barbarous* cruelty. But the cruelty of the present day towards inventors, in England at least, may be stigmatised as *refined* cruelty. Was it not *refined* cruelty which so persecuted and neglected Waghorn that his sister recently died in a workhouse? Was it not *refined* cruelty which so robbed Samuel Baldwyn Rogers of his just reward that, being reduced to abject poverty, when death approached he begged and prayed his brother masons to subscribe for his funeral, in order that he might be saved the disgrace of being laid in a pauper's grave?

It would be better to shoot or to behead a man right off than to allow him to die a lingering and painful death by poverty and starvation.

The cruelty of modern generations to men possessing original genius could hardly be better condemned than through the medium of the polished words of Washington Irving :—

"Thus honoured by the sovereigns, courted by the great, idolised by the people, Columbus for a time drank the honeyed draught of popularity, before enmity and detraction had time to drug it with bitterness. His discovery burst with such sudden splendour upon the world, as to dazzle envy itself, and to call forth the general acclamations of mankind. Well would it be for the honour of human nature could history, like romance, close with the consummation of the hero's wishes ; we should then leave Columbus

in the full fruition of great and well-merited prosperity. But his history is destined to furnish another proof, if proof be wanting, of the inconstancy of public favour, even when won by distinguished services. No greatness was ever acquired by more incontestable, unalloyed, and exalted benefits rendered to mankind, yet none ever drew on its possessor more unremitting jealousy and defamation, or involved him in more unmerited distress and difficulty.

"Thus it is with illustrious merit; its very effulgence draws forth the rancorous passions of low and grovelling minds, which too often have a temporary influence in obscuring it to the world; as the sun, emerging with full splendour into the heavens, calls up, by the very fervour of its rays, the rank and noxious vapours which, for a time, becloud its glory." (Washington Irving's *Life of Columbus*, p. 174.)

All nations are more or less cruel to inventors. But the cruelty of the English nation is more reprehensible than that of other nations. Because no nation has derived so many advantages from the labours of inventors as the English nation. No nation has been placed in a more favourable position for estimating the value of the labours of inventors. And no nation could so easily do justice to inventors as the English nation. Would it not be better for capitalists to lend money to inventors than to lose a hundred and fifty millions of it in loans to dishonest South American republics? "The feverish excitement of 1823 and 1824, originating in a great measure in the unbounded expectations of commercial prosperity which were generally entertained in this country from the final establishment of South American independence, only augmented the general distress, from the frightful catastrophe in which it terminated. All attempts to work the mines by British capital have failed, in consequence of the turbulence and insecurity of the country; and above a hundred and fifty millions of British money have been lost in those disastrous mining speculations, or in loans to the faithless insolvent republics of the New World. The amount lost by Britain in loans to North and South America and the revolutionary government of Spain, was stated by Lord Palmerston at this enormous amount in Parliament on the 17th July, '1847.'" (Alison's *History of Europe*, vol. xiv., page 361.)

Now would it not have been a hundred and fifty million times better for English capitalists to have lent their money

to English inventors than to dishonest South American republics?

However apathetic the nation may be in its treatment of inventors, there is not the slightest doubt that the Almighty is, by His providence, swift to avenge their wrongs.

There are innumerable evils from which the British nation suffers which inventors could easily remove. But who is going to be such a fool as to take trouble which is to be repaid only by persecution?

The nation suffers from agricultural depression. Inventors could show how that is to be removed. The nation suffers from parents not knowing what to do with their children. Inventors could show how that evil is to be remedied. The nation suffers from terrible depression in the shipping trade. Inventors could show how that difficulty is to be escaped. The nation suffers from the clogged and impeded condition of the legislative machinery. Inventors could show how that is to be put right. The nation suffers from the condition of litigation, which on account of its slowness, its awful costliness, and its occasional injustice, has become a positive curse to the country. Inventors could show how this is to be rectified without diminishing the fees of lawyers. The nation suffers much from the want of many suitable mechanical and chemical processes. Inventors could reveal these. But they will not, until they have a sufficient inducement to do so.

The obstacles in the way of inventors in England could hardly be better shown than by quoting the Second Schedule in Mr. Chamberlain's new Patent Law. Mr. Chamberlain deserves the thanks and the gratitude of every one interested in patents throughout the British Empire for his wise and successful Patent Law. Though very very far from being what an English Patent Law ought to be, it is yet a very great number of steps forward, compared with the most atrocious state of Patent Law before Mr. Chamberlain took its reform in hand.

The extraordinary and Herculean opposition made to reform in our laws is seen from the successful opposition made to Mr. Chamberlain's excessively modest demand for the prevention of murder by overloading. Every one possessing even a battered and injured conscience thought that Mr. Chamberlain's bill to prevent murder by overloading was one of the mildest remedies that could have been thought of. Most condemned it as a great deal too mild, holding that it should have had a little of the drastic in its

composition. Mild though it was, however, it excited the rage of mercantile murderers. It was therefore thrown overboard. Its fate ought to make inventors all the more grateful for Mr. Chamberlain's Patent Law. The fees for obtaining a patent are as follows.—

“Fees on instruments for obtaining patents.

(a) Up to sealing.						
On application for provisional protection	£	s.	d.	£	s.	d.
		1	0	0		
On filing complete specification ..	3	0	0	4	0	0

Or

On filing complete specification with first application				4	0	0
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(b) Further before end of four years from date of patents.

On certificate of renewal	50	0	0
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(c) Further before end of seven years, or in the case of patents granted after the commencement of this Act, before the end of eight years from date of patent.

On certificate of renewal	100	0	0
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Or in lieu of the fees of £50 and £100 the following annual fees:—

Before the expiration of the fourth year from the date of the patent.	10	0	0
Before the expiration of the fifth year.	10	0	0
” ” sixth	10	0	0
” ” seventh	10	0	0
” ” eighth	15	0	0
” ” ninth	15	0	0
” ” tenth	20	0	0
” ” eleventh	20	0	0
” ” twelfth	20	0	0
” ” thirteenth	20	0	0

So that a patent in England costs £154. And if an agent is employed, the agent's expenses are extra. And if drawings are necessary, the cost of drawings is extra. £154, though moderate compared with the old extortionate fees, places patents quite beyond the reach of the working

man. In America a patent costs only £8, in India only £10, in Belgium only £8 or £9. Therefore, though very much has been gained by Chamberlain's wise Patent Law, yet it indicates a spirit of cruelty towards inventors which is very deplorable. While an American can secure a full patent for eight pounds sterling, an Englishman requires to pay one hundred and fifty-four. Yet England is a poorer country than America. Some nations treat their cattle more kindly than the English nation treats its inventors. The Arabs, for instance, treat their horses much kinder than the English do their inventors.

"The Asiatic lives with his horse; his children play with it from their mutual infancy; the attachment on both sides grows with their growth, and strengthens with their strength; and when he has arrived at the full maturity of his powers, the noble Arab steed, endued almost with human sagacity, and fraught with more than human devotion, will die in the strenuous effort to save the play-fellow of his infancy from captivity or death. A most moving incident, illustrative of the extraordinary strength as well as attachment of the Arab horses, is given by Lamartine in his 'Travels in the East.' 'An Arab chief, with his tribe, had attacked in the night a caravan of Dumas', and plundered it; when loaded with their spoil, however, the robbers were overtaken on their return by some horsemen of the Pasha of Acre, who killed several, and bound the remainder with cords. In this state of bondage they brought one of the prisoners, named Abou el Marck, to Acre, and laid him, bound hand and foot, and wounded as he was, at the entrance to their tent, as they slept during the night. Kept awake by the pain of his wounds, the Arab heard his horse's neigh at a little distance, and being desirous to stroke, for the last time, the companion of his life, he dragged himself, bound as he was, to his horse, which was picketed at a little distance. "Poor friend," said he, "what will you do among the Turks? You will be shut up under the roof of a khan, with the horses of a pasha or an aga; no longer will the women and children of the tent bring you barley, camel's milk, or dourra in the hollow of their hand; no longer will you gallop free as the wind of Egypt in the desert; no longer will you cleave with your bosom the waters of the Jordan, which cool your sides as pure as the foam of your lips. If I am to be a slave, at least may you go free. Go: return to our tent, which you know so well; tell my

wife that Abou el Marck will return no more; but put your head still into the folds of the tent, and lick the hands of my beloved children." With these words, as his hands were tied, he undid with his teeth the fetters which held the courser bound, and set him at liberty; but the noble animal, on recovering its freedom, instead of bounding away to the desert, bent its head over its master, and seeing him in fetters and on the ground, took his clothes gently in his teeth, lifted him up, and set off at full speed towards home. Without ever resting, he made straight for the distant but well-known tent in the mountains of Arabia. He arrived there in safety, and laid his master safe down at the feet of his wife and children, and immediately dropped down dead with fatigue. The whole tribe mourned him; the poets celebrated his fidelity; and his name is still constantly in the mouths of the Arabs of Jericho.' (Lamartine, 'Voyage dans l'Orient,' vi., 236.) This beautiful anecdote paints the manners and the horses of Arabia better than a thousand volumes. It is unnecessary to say, after it, that the Arabs are, and ever will be, the first horsemen, and have the finest race of horses in the world." (Alison's History of Europe, vol. xv., page 128.)

Now, English inventors would be satisfied if the nation would treat them with half the kindness with which the Arabs treat their horses.

What then is to be done? The first thing to be done is—the nation must make an effort to get out of the niggardly ditch into which it has fallen. All classes of the poor and helpless in England are crying, because they are so shamefully neglected by the rich. The whole nation must make an effort to learn that befriending the poor enriches the nation, and that neglecting the poor impoverishes the nation. "There is that scattereth, and yet increaseth; and there is that withholdeth more than is meet, but it tendeth to poverty." "Give and it shall be given you, good measure, pressed down, and shaken together, and running over shall men give unto your bosom. For with the same measure that ye mete withal, it shall be measured to you again." "Honour the Lord with thy substance, and with the first-fruits of all thine increase, so shall thy barns be filled with plenty, and thy fruit-bins shall be pressed down with a great abundance of ripe grapes."

The next thing is—the Patent Law must be changed.

A patent ought to cost only one shilling, and the Government ought to receive one-third of the net profits of successful inventions. A large revenue would thus arise to Government, which would thereby, be powerfully induced to encourage inventors in every possible way. The laws relating to the possession and sale of patents ought to be similar to those relating to the possession and sale of land. That is to say, patents ought to be held not for the beggarly space of fourteen or fifteen years, but for ever, just as land can be held. A department ought to be established, having sole power to grant patents, and to settle, without litigation, all disputes regarding patents. For patent litigation is a potent cause of ruin to inventors.

I now come to describe a specific act of injustice done to myself as an inventor. It is a very mild act of injustice. I have endured immensely greater acts of injustice from being an inventor. But the account of them would rouse such a storm as might be dangerous. Therefore the following very mild act of injustice, of which I have been the victim, is pitched upon for description. It is at least safe, and not likely to provoke rage. When arctic explorers get any member of their body benumbed by the cold, to prevent it from being frost-bitten they plunge it into cold, not into hot water, as inexperienced people would do. So I do not choose a hot, burning case of wrong, but a small and feeble one.

About a year ago I invented what I considered a good system of Short-hand. I sent it to a publisher with money to cover the expense of printing and publishing it. He returned me the following letter :—

“MY DEAR SIR,—As I never care to put my imprint as publisher on anything that I cannot at least to a certain extent endorse, as my custom is I have read your manuscript entitled ‘A Perfect System of Short-hand,’ and am reluctantly obliged to tell you that I cannot possibly publish it, and do not even feel that I should be doing right to print it, as it stands. I consider your scheme as utterly impracticable, and I believe you would see it to be so if you were not suffering from *mental overstrain caused by incessant work*. I consider that its publication would be likely to injure you with persons in authority. I strongly advise you not to publish it. You will perceive that this advice is perfectly disinterested on my part, as of course I should make a profit by it were I to print it.

If you insist on having it printed in England I can hand the money and manuscript over to any one you choose, or return it to you.

“ Believe me, yours very sincerely,
“ X. Y. Z.”

Now the publisher in question is one of the noblest philanthropists in England, and a first-rate man of business to boot. And it is curious to observe how people manage, with the best intentions, to misunderstand each other. I sent my system of Short-hand to the publisher in question because I wished to encourage such a noble philanthropist and such a good publisher as I considered him to be. I thought my invention would confer some obloquy, but much greater honour, on him as a publisher, and therefore I sent it, with my own name, undisguised by a *nom de plume*. The publisher, however, thought me a fool for my pains.

From inquiries which I have undertaken, and from facts which I have collected, I find that it is by no means uncommon for an author to send his manuscript to a publisher along with money to pay for all the printing and publishing charges, and to receive such a letter as I received. The liberty of printing, of which Milton wrote, is consequently, so far as England is concerned, a myth, pure and simple. The more original any production is, the more likely it is to be consigned to the grave of oblivion, as Hebrew sons were to the Nile. A doctor, when called to attend a case of mortal sickness, may decline, if no fee is offered along with the call. But if a full and ample fee is offered, he could be prosecuted for refusing to attend. Publishers, however, have more liberty. Perhaps it is right they should have all the liberty they now possess. If I were a publisher myself, I should probably demand such liberty. But if so, it is high time that something were done to defend authors from the cruelty which such liberty inflicts on them. There surely ought to be, in every capital city, at least one publishing firm placed under compulsion by law to publish every original work, when its author is prepared to pay the cost of printing and publishing, provided it contains nothing obscene, disloyal, or dangerous to the State. It is highly probable that many productions as good as the “Song of the Shirt” have never seen the light from this single cause.

No class of men has yet arisen in England who are capa-

ble of loving originality at first sight. Even the best of men generally hate it at first, or at least see no beauty in it. Innumerable proofs of this might be adduced. But I shall quote only two. The celebrated Spurgeon has recently been holding his jubilee with honours which are almost national. Yet this great man was, on his first appearance in public, condemned in the most unmeasured terms by those who ought to have been the best judges of his excellence. At the jubilee demonstration recently held, several important speeches were made. And the following is an account of one of the speeches as contained in the *Non-conformist and Independent* of the 26th June, 1884 :—“When the Rev. W. Williams, of Upton Chapel, had spoken of Mr. Spurgeon's sympathy with others, and the readiness to render help to his brethren in the neighbourhood, the Rev. Dr. Parker, who was received with great applause, told how, many years ago, he was coming out of a chapel in Sheffield in which Mr. Spurgeon had been preaching, and some one said to him, ‘I hope you don't consider this young man a fair specimen of our Baptist ministry. I should be ashamed of our ministry if he represented them.’ He (Dr. Parker) noticed that a change had taken place somewhere, but it must have been on the other side, for Mr. Spurgeon had not changed. What a wonderful change! said he. There was sown a man who was worthy only of contempt, and, behold, he had awaked in the glories of a newspaper article! There was yet hope for the very worst of them, for what knew they but that some poor dying pulpit thief might awake in the paradise of a newspaper eulogium?”

There is not the slightest doubt that many a man as great in the author's line as Spurgeon is in the preacher's, has had his genius snuffed out and his talents rendered perfectly useless for his day and generation, owing to the erroneous judgment passed upon him by a publisher. And if this is true of great men, it is still more true of common men, who are yet possessed of very useful talents. Now, such a state of things constitutes a piece of injustice of the most iniquitous kind. And it is well that those who are thus crucified should make their bitter cry heard, if by any means Englishmen may be turned from the practice of this diabolical injustice, which unfailingly draws the vengeance of Heaven on the nation which perpetrates it.

A volume might be filled with instances of the crass and almost incredible stupidity of publishers, literary critics, et

hoc genus omne, in condemning works of the most attractive originality, on grounds so utterly frivolous and unreasonable as to make subsequent generations ask whether the said critics were sane or insane. Space forbids the multiplication of such instances, but I cannot refrain from adducing the case of Bruce, the celebrated African traveller. Lest I should appear to exaggerate, I shall quote verbatim the words of "Maunder's Treasury of Biography":—

"James Bruce, one of the most celebrated of modern travellers.—For a short time he held the post of British consul at Algiers, but resigned it in order to gratify his passion for travelling. After traversing the greater portion of Asia Minor, he set out on a journey to ascertain the source of the Nile. An account of this journey he subsequently published; and some of his statements, particularly those which referred to the manners and customs of Abyssinia, were received with mingled incredulity and ridicule. Though greatly annoyed by the disgraceful illiberality with which he had been treated, he bore the taunts and sneers of his shallow critics with a taciturn pride, not deigning to satisfy disbelief, or to disarm ridicule, but trusting the day would ere long arrive when the truth of what he had written would be confirmed by others; and it is now clearly proved, from the statements of many subsequent travellers, that he was every way undeserving of the censure bestowed on him."

The public, or at least the custodians to whom the public deliver the power of pronouncing judgment on intellectual merit, have so very frequently and so very egregiously erred, in very important cases, that it is nothing but the height of cruelty to refuse to authors the help necessary to throw off such intolerable tyranny. How egregiously, for instance, critics were at fault in judging of the intellectual calibre of Louis Napoleon Buonaparte before he became Emperor of France. Kinglake, in his "Invasion of the Crimea," says: "Both in France and in England, at that time, men in general imagined Louis Napoleon to be dull. When he talked, the flow of his ideas was sluggish; his features were opaque; and after years of dreary studies, the writings evolved by his thoughtful, long-pondering mind had not shed much light on the world. The opinion which men had formed of his ability in the period of exile was not much altered by his return to France: for in the Assembly his apparent want of mental power caused the world to regard him as harmless, and in the chair of the

President he commonly seemed to be torpid." The fact is—deserving, or at least great men, have been so often mis-judged, that it may now be taken as a correct opinion, that a tolerably sure sign that a man is either deserving or talented, is his being condemned in the most unsparing manner by somebody who is thought to be a good critic.

In view of these things it seems high time that authors should possess the power to get their works published, on paying for their publication, without the necessity of their being first submitted to a censor in the person of a publisher. The State, or private persons, ought to establish a firm which, by law, should be bound to publish every work for the publication of which an author is willing to pay, provided it contains nothing immoral, obscene, blasphemous, or treasonable. For want of such a publishing firm there are doubtless many first-class works of the highest originality consigned every year to oblivion—works, the publication of which would do immense good to the civilised world, pecuniarily, politically, and morally. A few of them, like the "Song of the Shirt," may be rescued from oblivion twelve or thirteen years after they were first offered to publishers; but as there are few rescuers like Mark Lemon, the vast majority must perish.

Now for my rejected Short-hand system.

There is at present no good system of short-hand in existence. This may seem a startling fact, but it is a true one. A magnificent History of Short-hand was published in 1882 by Mr. Thomas Anderson. That history seems, by a very long way, to be the most perfect which has yet appeared. It deserves, and is almost certain to receive, very high praise. Well, the following quotations from such a high authority prove most conclusively that in 1882 there was no good system of short-hand in existence, though some three thousand volumes of short-hand have been published in Europe during the past three centuries. Anderson says: "At the present stage of our inquiries, it might seem unwarrantable to do more than hint that short-hand is as yet a science to construct, to resuscitate, or to reconstruct. There are, indeed, one or two systems of relatively conspicuous merit in vogue throughout the world to-day; but they, too, it would seem, are liable to objections sufficiently serious to disqualify them from being considered exceptions to the remark made in the second paragraph of the last chapter. Indeed it is often said, with much apparent truth, that it is owing to the obstacles thus presented that short-hand

has not hitherto attained an adequate measure of acceptance by the general community in this country. Whether that be really so or not, the practice of the art is at any rate confined to a comparatively small number of our fellow-subjects, which ought not to be the case, if we only consider its inherent utility, and the many benefits attendant on the proper cultivation of it."

Of course it may be alleged that it is to the want of application in the learner that such regrettable results are due, but that allegation receives an answer only too convincing when it is shown that young men who have surmounted some of the most difficult elements of a liberal schooling have failed in this—singularly failed—or, at least, have not derived any compensating advantage for the time and labour expended on this particular study. Why? Surely it will not be affirmed that to acquire, not expertness as a professional short-hand writer, but enough dexterity for everyday purposes, ought to be a more arduous task than is that of mastering Mathematics, Latin or Greek, French or German. As the case stands, however, it seems beyond dispute that, for a thousand pupils who set about learning one or other of the ordinary methods of short-writing, there are not, perhaps, four or five who arrive at anything like real proficiency. "A legible short-hand," says an observant journalist, "*is the want of the age.*" (*Church Review*, May, 1881.)

This seems a startling assertion, but it is true, and the wonder is increased when we learn that the number of works on short-hand published, previous to June 23rd, 1883, was 3,422, 923 of which are in the English language. (See *American Bureau of Education, Circular No. 2 of 1884*.) Just think of that! Three thousand four hundred and twenty-two works on short-hand, and not one of them satisfactory!

Says Professor Everett, of Queen's College, Belfast (*Short-hand for General Use*, 1877): "Persons able to write short-hand form an extremely small portion of the community. This fact is surely an indication that existing systems have been found wanting in some of the qualities essential for general use."

It is only a few years since these words were written, but many other authorities, both before and since, of undoubted respectability, have expressed themselves to the same effect: as for example—

Mr. W. Matthew Williams, F.C.S., author of "Through

Norway with a Knapsack," &c., says: "Few active-minded men have not at one time or another commenced learning short-hand. Yet how small a proportion of the beginners have done any more than make such a commencement."

Mr. Williams afterwards informs us how he came to construct his own system, entitled "Short-hand for Everybody" (1867). He says: "The system here expounded is devised specially to overcome the usual difficulty of reading short-hand arising from the complication and extreme contractions absolutely necessary for verbatim reporting, which are here unattempted. It was in 1841," he continues, "that I first took lessons in Harding's—a modification of Taylor's system; then a few years afterwards studied Pitman's beautiful and elaborate, but very complex, system of phonography; afterwards, I tried to amalgamate them, then started a system designed to supersede both—a system purely phonetic, with every sound represented, and all the vowels joined. With great reluctance, I threw this up on account of its complexity, and returned to a further modification of Harding's and Gurney's; then carefully studied all the systems that have been published, and picked out hints from each to supplement my own ideas, turning over and over my own and others' experience, and finally settled down upon the very simple system here expounded." "Notwithstanding," says Mr. John Thomson, P.H., President of the Scottish Phonographic Association; Teacher of Oriental Languages, Royal High School; and Lecturer on Phonography, School of Arts, Edinburgh; an advocate of Mr. Pitman's system of writing, "the extreme simplicity and beauty of this most useful art, a false and futile system of teaching it, which has everywhere obtained, has led tens of thousands after long and painful plodding in the dark, to lay it aside at last as a hopeless and useless phantom. It would scarcely," he says, "be fair to charge the great father of phonography directly as the author of the stupid method of teaching it, which has been so uniformly followed both in the Old and in the New World; and yet it may be said that the author of phonography has been the indirect cause of preventing his world enlightening discovery from becoming a popular study in his own country up to the present time. But a strong remedy in the teaching of short-hand has at length been loudly called for."

Again, Mr. J. B. Dimbleby, a practical man, author of a Short-hand Dictionary (Groombridge and Sons), says: "My answer to the question, Which is the best system?

is always, *That which is most easy to acquire*. Proficiency does not depend so much on the system used as on the ability for using it. Odell's or Taylor's improved, which are substantially the same, are, I believe, the most used by newspaper reporters. This is, I believe, owing to their being so easy to write and so ready to acquire. Great efforts have recently been made to bring Mr. Pitman's system of phonography into more general use, and when acquired it is probably an excellent system. Care should be taken that in aiming at making a system short it is not made long. I confess that some of the improved phonetics have a very wriggled appearance, and the multitude of details with which they are burdened must greatly militate against their general adoption for public use." (Anderson, page 93.) Again the same author says: "Scott de Martinville, whose work is perhaps the most interesting and worthy contribution to the history of stenography that has ever appeared, and in which an alphabet is given of the Tyronian method of short-hand, and reviews of some forty French systems—in fact, all that had appeared in that country from the year 1654 till the date of his writing, says:—'*I am not able to deny the existence of stenographers, but I deny the existence of stenography.*' I say there has not yet been presented to the public a method resting on fixed and rational principles sufficient to constitute the art in such a manner as to fulfil its special, its unique destination, *that of following exactly the word, and to be at the same time accessible to persons of average capacity.*' He goes on to say that all the professional short-hand writers whom he knew were men of very great intelligence, of quick apprehension, of retentive memories, and especially gifted with much dexterity and agility of hand; but, he adds, 'exceptional organisation can never be alleged as proofs for establishing an argument—that, namely, in favour of short-hand as it is.' And to illustrate this proposition, he adds, 'If Paganini, for example, may execute a concert on the chanterelle of a violin, does it follow that this *tour de force* is an accident of the instrument?'"

Adolphe Pelletier says:—"These different systems (and Pitman's and Taylor's are well enough known to Frenchmen), *in spite of the emendations they have undergone, are still burdened with pitiable drawbacks.* In some, the signs, when united for the purpose of forming words, have only the value of one or two letters, not more; in others it has been found practicable, indeed, to invest the signs

with a larger alphabetical value, but that only by subjecting them to an infinitude of changes of direction, nay, even of outline—a something which renders the study extremely irksome, independently of the chances of errors which attend this multiplicity of changes.” (Anderson, 104.)

“In spite of all that has yet been done in their behalf, the demerits of the current systems of short-hand afford a theme of general and repeated comment in the French press. In January, 1877, a paragraph went the rounds of the Paris newspapers, calling particular attention to this inconvenience, animadverting on the comparative prominence given to short-hand in Germany, and setting forth the great desirability of founding in France some system superior to existing French ones.” (Anderson, 141.)

These quotations prove, I think, most conclusively, that every existing system of short-hand is extremely defective, and that every person connected with literature ought to do his best to introduce a more perfect system. The worthlessness of existing systems could not have been satisfactorily proved by the affirmation of one proposing a new system. Therefore these lengthy quotations have been adduced from no less an authority than Anderson, who has up to date apparently written by a very long way the best history of short-hand.

PITMAN'S SYSTEM UTTERLY CONDEMNED BY THE BEST AUTHORITIES.

I come now to a consideration of Pitman's system. People will be astonished to hear that Pitman's system is utterly condemned by the best authorities. Their condemnation is, beyond a doubt, perfectly just. Mr. Matthias Levy, one of the most competent authorities, says :—“We now come to one of the most remarkable inventions of the present century—the Phonography of Mr. Isaac Pitman. To begin at the beginning, it is necessary to state that the fundamental principle of Phonography is that of sound.” He then quotes Mr. Pitman's dictum to the effect that “the organs of speech being the same all the world over, if he were able to represent the one hundred sounds emitted by a human being, he would have discovered the basis of that great desideratum, a universal language.” Mr. Levy then proceeds :—“Now this subject has been in men's mouths since 1540. To assimilate the sounds of speech, which are the same all over the world, has been the object and ambition of hundreds. But we are afraid that a universal

language, and perpetual motion and the philosopher's stone, must go together.

"Mr. Pitman objects to the Roman alphabet. He says further that all short-hand systems are defective, because they are based upon the Romanic alphabet. On examination, however, Pitman's alphabet proves to be the English alphabet transposed. *A more confused method could not well be desired. It is full of difficulty, and must entail considerable trouble when it comes to be read. Compare it with the systems of Taylor, Mavor, or Byron.* Compare their rules with those of Pitman, in which he explains how to write the Scotch guttural, the Welsh LL, the nominal consonant, and the syllabic diphthong. The confusion, the multiplicity of characters, the variety of sounds, all lead to one conclusion, *that this is one of the most ill-constructed and deficient systems ever invented.* The author may well ask why Parliamentary reporters do not use it. Notwithstanding its defects, thousands, we are told, have learned it. But we cannot alter our opinion, and phronography, we think, with its ambitious object, is a failure.

"We wish to speak with every respect of this system—it is used at the present day, and that is the utmost that can possibly be said in its favour; but we contend that popularity is no test of merit. Jim Crow was popular, but few will venture to say it had any merit."

It may, perhaps, appear superfluous to quote Mr. Levy's opinions concerning Taylor's system, since that is the one which he uses with some trifling exceptions. Still, a sentence may be given from his observations upon the system.

He says:—"The alphabet of Taylor is undoubtedly the best. We believe we are correct in saying that Taylor's system is more extensively used at the present day than any other. Although nearly a century has elapsed since its invention, it has never been surpassed for simplicity and utility."

Professor Henri Krieg says that he has acquired the settled conviction that the invention of the Bavarian genius F. X. Gabelsberger is the only system of short-hand which is adequate to the requirements of those who are much engaged in writing. (Anderson, 99.)

Anderson further says:—"The repetition of an evil even remotely similar to Pitman's system of short-hand would

be quite too much in the history of our planet."
(Page 137.)

These are strong words, but I can see no reason for affirming that they are not thoroughly justifiable. Anderson further gives a series of startling and positively appalling illustrations of the dangerous mistakes which Pitman's system gives rise to. This is an evil found more or less in every existing system of short-hand, especially of Phonography. The words of Mr. Thomas Allen Reed, the *pontifex maximus* of phonography, are well worthy of consideration in reference to this point. They will be found on page 131 of Anderson's History.

Anderson further says :—"Many years ago I persuaded a brother reporter, then a proficient in Pitman's system, to abandon it for Taylor's, and, as I anticipated, he afterwards expressed the greatest satisfaction at the change. This gentleman now holds a high position in our profession" (page 272). Anderson says of Pitman's system, "It is a great obstacle to our educational progress. It occupies the place of better systems, and should be dismissed." He also declares that "*the formation of a really good system of short-hand has yet to be shown to the world*" (page 138).

While Pitman's system of short-hand is to be condemned, his system of spelling English words is worthy of the highest praise and encouragement. By proposing and introducing that system Pitman has shown that he possesses genius of a high order. No less a sage than the great Max Müller has written one of his very best essays with unusual skill, for the sole purpose of recommending Pitman's system of spelling. It is strange indeed that the English public should have adopted Pitman's exceedingly erroneous and retrograde system of short-hand, and should have despised and neglected his celebrated and truly excellent system of spelling reform—and that, after it had been recommended by such a very high authority as Max Müller. It is a mournful illustration of the fact that men in general have a strong tendency to do those things they ought not to do, and to leave undone those things they ought to have done. England ought to have encouraged Waghorn, but instead of that he was neglected, and metaphorically crucified. And his sister recently died in a workhouse. Lord Palmerston ought to have encouraged the Suez Canal. But instead of that he opposed it, with all the resources of Britain to aid him. And as the spirit

which crucified Waghorn is still rampant, all who have the honour of their country at heart ought to resist it with all their might. Pitman's system of spelling-reform ought at once to be universally adopted.

Pitman seems to believe in the possibility of a universal language being yet spoken by man. This will certainly occur, because it is predicted in the Bible. And while heaven and earth are destined to pass away, not one iota of Holy Writ shall fail to be accomplished, notwithstanding all that sceptics and agnostics allege to the contrary. In Zephaniah iii. 8 we find the following words—"Therefore wait ye upon me, saith the Lord, until the day that I rise up to the prey: for my determination is to gather the nations, that I may assemble the kingdoms, to pour upon them mine indignation, even all my fierce anger, for all the earth shall be devoured with the fire of my jealousy. For then will I turn to the people *a pure language*, that they may all call upon the name of the Lord, to serve him with one consent." As the universal language was, early in history, broken into fragments at the building of Babel, by a miracle, so, by the same means, will it, near the end of time, be reunited into one again. It must be confessed, however, that nothing short of a miracle is ever likely to bring about this wished-for consummation. Consequently those who spend or rather waste their time in the effort to invent a universal language are as likely to succeed as are those who try to raise the dead.

The dead shall yet rise from their graves. A few of the dead have been raised in the past. But it always has been, and it always shall be, by a miracle. Notwithstanding this, there are probably not a few scholars, who, in the privacy of their quiet studies, spend their time, like Leibnitz, in the futile effort to invent a universal language.

GOVERNMENT HELP REQUIRED TO ENCOURAGE SHORT-HAND.

Mr. Anderson deplores, in very strong terms, the fact that the British Government does not, like the German Government, encourage short-hand by liberal endowments. "Short-hand has no small claim to State support. We deplore the fact that in our country short-hand is not sanctioned and supported by that influence and aid which it receives abroad. We deplore that it is left entirely to the option of pupils whether they shall learn short-hand,

and that they are without any guide except the active puffers of their own particular plans as to what system they ought to learn. There ought to be, in this country, no less than in Germany, a competent staff of men paid by the State to look after the interests of an art of so great importance and possibilities. These remarks apply to America, and to our own country, and to both probably in an equal degree. Why should Germany spend thousands yearly in the protection and fostering of this art, and why should England and America spend nothing? Why, further, should German State funds be devoted, apparently with no niggard hand, to propagating their Gabelsberger system in foreign countries, and why should England and America be so careless of the interests of short-hand even at home. These questions, we venture to hope, will receive the attention they deserve in the right quarters. Our immediate province, however, is to point out in what direction the advancement of the art, both with ourselves and with our American cousins, really tends. Well now, without insisting at further length on the points already referred to in the chapter on the essentials of superiority in short-hand systems, we again revert to that principle first started, but neglected in England, commended in France, but adopted in Germany, and by the exertions of German scholars and professors fast spreading throughout all European nations. That principle is—having your short-hand alphabet, as is the case with ordinary writing, *composed of characters all on one slope.*" (Anderson, page 225.)

From the statements of Anderson, and of many other writers on short-hand, the following facts may be accepted as completely proved:—

1. That England is worthy of very severe censure for not giving as liberal State aid to short-hand as Germany does.
2. That Gabelsberger's German system is equal, and probably even superior, to Taylor's system, its superiority consisting in its alphabet being of the same slope as long-hand writing.
3. That in Germany there are many hundreds of professors of short-hand, and many thousands of students.
4. That on the continent of Europe a very great deal more attention is given to the study of short-hand than is the case in England.

5. That all existing systems of short-hand are wonderfully defective.

6. That existing systems are utterly and even ludicrously incapable of enabling a short-hand writer really to write as fast as a rapid speaker speaks.

7. That the aim of short-hand inventors ought to be the shortening the time required to write long-hand, until it becomes short-hand, which may be capable of being used as the only medium of human penmanship.

8. Another point which ought not to be overlooked is the fact that short-hand writers have extraordinary difficulty in reading what they have written. Not only is it quite impossible for the expertest short-hand writer to keep pace with a rapid speaker, but it is often exceedingly difficult for him to read his own notes. Mr. J. B. Dimbleby has recently published a Dictionary of Short-hand. The following is an extract from its preface, which speaks for itself. "The design of this book is to assist inexperienced writers to read what they have written, and to make the introduction of vowels less necessary by proficient reporters. To every one, however, who writes short-hand—no matter what system—it will be found useful. In plain words, it is a Dictionary ; and as its compilation has taken more than six years of close application, and the writer throughout has had a great desire to make it complete, and worthy of universal approval, he feels sure that, no matter how thoroughly practical and experienced a writer may be, it will not be undeserving of a place on his desk.

"I well remember my own troubles when I began to report for the press, and many weary hours of the night I have spent in transcribing notes for the want of a book like this, which to me would have been worth its weight of gold. *In fact it requires time and practice to familiarise the mind with words divested of such important sounding letters as vowels* ; for instance, I well remember the anxiety of mind I experienced because I could not make out what word an eminent M.P. had used in an after-dinner speech, which in my note-book was represented by the short-hand letters for plgs. I had to leave it to a later contemporary to inform the honourable member's constituents that he did not think it necessary to *apologise* in reference to a certain vote in the House. I did not lose my situation, but I dare not say what the consequence was. How many tales of this kind can an elderly member of the 'Fourth Estate' recall !"

Now the above quotation shows how urgent is the necessity for improvement in short-hand.

MY SYSTEM OF SHORT-HAND DESCRIBED.

The problem connected with short-hand is simply this—a method is wanted by which a speech can be taken down *as rapidly and as exactly as it is spoken. No system of short-hand at present used is able to do anything like this.* As Anderson shows, verbatim reports of speeches are now very rare. The sense of speeches is given pretty correctly, but not the exact words of the speaker. My plan for taking down, with great ease, the exact words of the speaker is as follows :—

Let fifteen persons sit in a row, with writing materials before them. Behind them, let another row of fifteen persons sit, with no writing materials before them. Let the first man of the *second* row touch the first man of the *first* row on the left shoulder, as soon as the speaker whose speech is to be taken down speaks the first word. Let the second person in the second row touch the second man of the first row on the left shoulder as soon as the second word of the speech is spoken. Let the third person in the second row touch the third man in the first row on the left shoulder as soon as the third word is spoken, and so on until the fifteenth person of the second row has touched the fifteenth person of the first row, when the first man will begin again. Let each man in the first row write down *the word that was being uttered when he was touched*, and let him afterwards write down also the word before and after it, underlining the word that was being uttered when he was being touched. When the speech is finished, let the second row come and sit in front of the first row, facing the first row, and let them write down in order the words which have been taken down by the first row. The first man of the second row can write a page. Then the second man of the second row can write the second page, and so on. This will give the others a rest. The pages being put together will constitute the speech.

Few speakers have had so many of their words taken down by short-hand writers as Spurgeon. Therefore I shall select from his works the following passage to illustrate my system. It has a double advantage, because it contains that piece of wisdom, which, if put in practice by mankind, would, more than any other means, render it quite un-

necessary for inventors, and other classes of the poor and helpless, to cry out of their wrongs.

"Ye looked for much, and lo, it came to little; and when ye brought it home, I did blow upon it. Why? saith the Lord of hosts. Because of mine house that is waste, and ye run every man unto his own house." (Haggai i. 9.)

"Churlish souls stint their contributions to the ministry and missionary operations, and call such saving good economy; little do they dream that they are thus impoverishing themselves. Their excuse is that they *must* care for their own families, and they forget that to neglect the house of God is the sure way to bring ruin upon their own houses. Our God has a method in Providence, by which He can succeed our endeavours beyond our expectation, or can defeat our plans to our confusion and dismay; by a turn of His hand He can steer our vessel in a profitable channel, or run it aground in poverty and bankruptcy. It is the teaching of Scripture that the Lord enriches the liberal, and leaves the miserly to find out that withholding tendeth to poverty. In a very wide sphere of observation, I have noticed that the most generous Christians of my acquaintance have been always the most happy, and almost invariably the most prosperous. I have seen the liberal giver rise to wealth of which he never dreamed; and I have as often seen the mean, ungenerous churl descend to poverty by the very parsimony by which he thought to rise. Men trust good stewards with larger and larger sums, and so it frequently is with the Lord; He gives by cartloads to those who give by bushels. Where wealth is not bestowed, the Lord makes the little much, by the contentment which the sanctified heart feels in a portion of which the tithe has been dedicated to the Lord. Selfishness looks first at home, but godliness seeks first the kingdom of God and His righteousness; yet in the long run, selfishness is loss, and godliness is great gain. It needs faith to act towards our God with an open hand, but surely He deserves it of us; and all that we can do is a very poor acknowledgment of our amazing indebtedness to His goodness." ("Morning by Morning," October 26.) And again, "He that watereth shall be watered also himself" (Proverbs xi. 25). "We are here taught the great lesson, that to get, we must give; that to accumulate, we must scatter; that to make ourselves happy, we must make others happy; that to become spiritually vigorous, we must seek the spiritual

good of others. In watering others, we are ourselves watered." (*Ibid.*, August 21st.)

Now to take this down by the short-hand method the following operations would be performed. The first person in the second row would, with his right hand, touch the first person in the front row on the left shoulder, when the person touched would immediately write

Ye

on his paper. He would next write immediately after it

looked,

so that on the paper of the first person in the front row there would be written the words

Ye looked.

But immediately after the first person in the front row had been touched, the second person in the front row would be touched by the person behind him. And he would immediately write on his paper the word

looked,

and then he would put before it the word *ye*, and the word *for* after it, so that on his paper there would be the words

Ye looked for.

Immediately after the second person in the front row had been touched, the third person in the front row would be touched by the person behind him, and he would immediately write on his paper the word

for.

He would then write before it the word *looked*, and after it the word *much*, so that on the paper of the third person in the front row there would be written the words

looked for much.

When the second row came in front, and began to write the words read out by the row which had written, the following would be the words which would be found on the papers.

The first person's paper would have the words—

Ye looked

The 2nd.....Ye looked for

The 3rd.....looked for much

The 4th.....for much and

The 5th	much <i>and</i> lo
The 6th	and <i>lo</i> it
The 7th	lo <i>it</i> came
The 8th	it <i>came</i> to
The 9th	came <i>to</i> little
The 10th	to <i>little</i> and
The 11th	little <i>and</i> when
The 12th	and <i>when</i> ye
The 13th	when <i>ye</i> brought
The 14th	ye <i>brought</i> it
The 15th	brought <i>it</i> home
The 1st	it <i>home</i> I
The 2nd	home <i>I</i> did
The 3rd	I <i>did</i> blow
The 4th	did <i>blow</i> upon
The 5th	blow <i>upon</i> it
The 6th	upon <i>it</i> Why
The 7th	it <i>Why</i> saith
The 8th	Why <i>saith</i> the

And so on.

The marks (o o o) would mean that the orator was not speaking when the writer was touched.

The marks (house. o Churlish) would mean that the orator had come to the end of a sentence after the word house.

It of course will be evident that no harm will be done if the front row are touched faster by the second row than the rate at which the words are spoken by the orator. This would only lead to some long words being repeated twice or even thrice in the writing of the front row. Such a thing is not a serious evil. But care must be taken that the front row are not touched at a slower rate by the second row than the rate at which the words are spoken by the orator. This would be a serious evil, because it would cause some words to be omitted.

The above method will enable each writer to write with ease and comfort, and even to write slowly. And it will not be necessary for the writers to write short-hand at all. They can easily write long-hand. For, however rapidly an orator speaks, it is the easiest thing possible for a person to take down, in good, round, legible long-hand every fifteenth word that he speaks.

Some will say, "*This is all very fine, but what a dreadful expense it will necessitate!*" My reply is—it will be expensive,

but not so expensive as the present system by a long, long way. The *Times* employs a corps of sixteen short-hand writers for the gallery of the House of Commons. Suppose that every other leading London paper employs only three, there must be near a hundred short-hand reporters for the House of Commons alone. Compare one hundred with thirty! When Mr. Shaw, of Madagascar celebrity, appeared at Exeter Hall, there were forty short-hand reporters in the reporters' gallery. Compare forty with thirty. And my system is capable of being written efficiently by a much smaller number than thirty. For instance, the second row might consist of only five persons. Because one man could touch three men in the front row in succession, without moving out of his place. This arrangement would reduce the number required from twenty to thirty. And machinery might easily be used for doing the work of the second row —*i.e.*, for touching the front row. An axle with radial arms might, by revolving, touch the persons in the front row, one after another.

Probably, nine men in the front row, and three behind them, might, without machinery, be found sufficient. And if machinery were used, nine men in the front row, and one to turn the wheel, would probably be found enough. And if the writers wrote short-hand of any kind, then four in the front row and two behind might probably (without any machinery) be found sufficient.

The railway system is a much more perfect method of locomotion than the stage-coach system. But while the stage-coach system cost only from £100 to £800 a mile, railways cost from £10,000 to £39,000 a mile. And some entire railways have cost the almost fabulous sum of one million pounds sterling per mile. The stage-coach system was apparently cheaper than the railway system, yet it was, in reality, immensely dearer than that system. For, besides the fact that each passenger by the stage-coach system had to pay much more than each railway passenger, he was carried to his destination much more slowly, and much less comfortably than the railway passenger is carried. The stage-coach system required little capital, but it was intolerably inefficient. The railway system requires immense capital, but it is very efficient. Now the system of short-hand which I have been proposing requires a larger capital (*i.e.*, a larger number of men to work it) than the old systems. But I hold that it is perfectly efficient, as it reveals a method by which the speech of the most rapid speaker

may, with the very greatest ease, be taken down, exactly as it is spoken. *No existing system can do this, or anything like this, as can be proved by referring to the pages of Anderson.*

Yet confessedly inefficient as the old systems of short-hand have been, professorial chairs have been established to teach them, not only in such advanced places as Germany, but even in such backward countries as Spain. By royal ordinance in 1802, a chair for short-hand was established at Madrid, and the first professor named was Marti, the translator of Taylor's short-hand. Xaramillo was a pupil of Marti's (Anderson, 290).

Every sessions court throughout the country ought to have a short-hand organisation. Court business would then be transacted five or six times quicker than it is at present, with more exactness, and with far greater comfort to all concerned.

It seems that a colonial professor in a college, either in the East or in the West Indies, has recently published a new system of short-hand of an entirely novel character. The English alphabet is printed many times on a page of paper. And short-hand is written by the writer drawing his pen or his pencil through the required letter in each set of alphabets successively. The alphabet is printed about two hundred and thirty times on a page. Supposing the short-hand writer wanted by this method to write the word *liberality*, he would draw his pen or his pencil through *l* in the first set of alphabets, then through *i* in the second set, through *b* in the third set, a set would next be passed over to represent the letter *e*, the pen or the pencil would thereafter be drawn through *r* in the fifth set, through *a* in the sixth set, through *l* in the seventh set, through *i* in the eighth, through *t* in the ninth, and through *y* in the tenth set. There are affixes such as *ty* and *ity*, so that when the pencil is drawn through them there is a very considerable saving in time. Specimens of four short-hand sheets of this colonial professor's system are at present in my possession. These four, as the system has been published, I am at liberty to criticise. Sheet No. 1 is frightfully complex. It consists of a sheet, folio size, with the following printed sixteen times upon it.

o. 1 2 3 4 b 6 c 8 d 10 h i 13 14 15 16 17 18 l m 21 o 23 p r 26 t 28 w a b c d
f g h i j k l m n o p q r s t u v w x y z & ago all are as at been but by call can
come could did do done each e-very first for from give-n go God good great had
have he how if in is it lord me Mr. more much my no nor not of on one or

other our out read shall short should so spirit that the their there them thing
think to too truth two under up upon us was were where what when which
who will with word would year your ab ac ad al circum con-tra cum des dis
extra for im in-r-o op pre pro recom sub super trans un with able ary ate dom
eous ful hood ing-s ion ious ity kind less ly ment ness self ship sion tion tude
an n.

The marks at the top, viz., O I 2 3 4 b, &c., refer to the following, which is printed at the top of each page :—

1 a few years 2 according 3 advantage 4 as a whole 5 because 6 beyond our
control 7 cannot 8 coming and going 9 difficulty 10 from day to day 11 however
12 immediate 13 important 14 ce 15 improve 16 ed 17 ment 18 in consequence
of 19 language 20 member 21 not only 22 opinion 23 opportunity 24 particular
25 remember 26 ed 27 tear and wear 28 to and fro 29 without.

Short-hand sheet No. 2 contains the following, printed sixty-four times on a page :—

a b c d f g h i j k l m n o p q r s t u v w x y z & are the that which ing tion.

The following is a set of the alphabet belonging to short-hand sheet No. 3. It is printed two hundred and thirty times on a page.

a b c d f g h i j k l m n o p q r s t u v w x y z & are the that which ing tion
ly ty.

The following is a set of the alphabet belonging to short-hand sheet No. 4. It is printed one hundred and sixteen times on a page :—

a b o d f g h i j k l m n o p q r s t u v w x y z & ch nd ng sh th 1 2 3 4 5 6 7 8 9 10
ing ion ive ness ty always an are as have his like more than that those which who

The numbers 1 2 3 4 5, &c., refer to the following (printed at the top of each page) :—

1. The present. 2. The past. 3. The former. 4. The latter. 5. A week.
6. A year. 7. Nothing. 8. Bona fide. 8. Pride goeth before destruction,
and a haughty spirit before a fall. 10. There is that scattereth, and yet in-
creaseth ; and there is that withholdeth more than is meet, but it tendeth to
poverty.

No. 4 is the best, and extremely suitable for being used as the universal mode of penmanship.

The letter e, which is the letter which occurs most frequently in the English language, is not found in the set, the sign for it being a set passed over.

Now the question is, Will this system work? Will it be possible for an expert to write by means of it as fast as a person speaks, I trow not. An expert will be able to write

as fast by it as by Taylor's system, but not faster. It is certainly easier to learn than Taylor's system. And it is applicable to every language, while the other system is applicable to not more than one language. It may be useful as the universal mode of penmanship. It would then destroy the possibility of illegible penmanship at a stroke. But that it can ever enable a man to keep pace with a rapid speaker seems impossible.

In reference to all existing systems of short-hand, it ought never to be forgotten that practice makes experts as nearly perfect in them as their defects will allow. When one begins to play the piano, he plays at first very slowly ; but, by practice, he learns to play with the greatest rapidity. But the chief aim of good short-hand is not the perfecting of a few experts. The chief aim of short-hand is, in the first place, to invent a system which will enable men of moderate education to keep pace easily with the swiftest speaker, and, in the second place, to supersede common long-hand writing in ordinary correspondence, and in the ordinary business of life. The second aim, at least, is the view approved by Anderson, who says (page 161), "M. Chauvin, we ought to state, recommends the application of stenography to the ordinary writing. *That, indeed, is the true aim of all short-hand.*"

Short-hand bids fair to become a *sine quâ non* of a good education. "The governments of the different parts of Germany have been convinced of the general utility of short-hand ; they have encouraged its progress and organised its public teaching, under their patronage, and at their cost, with the result that to-day, stenography is everywhere in Germany, one of the branches, sometimes obligatory, more frequently facultative, of the public instruction. Besides, numerous stenographic associations have been formed for the purpose of propagating stenography, of maintaining a unity of system, of studying all questions of stenographic interest, and of affording, often, a support not only moral, but of a material and pecuniary character, with the view of bringing about a practical solution. These associations are busy at their work, and the most important of them are represented by a special journal each. It is, therefore, not astonishing that under this powerful impulse, with such favourable conditions of application, and with that well-known disposition of perseverance characteristically German, the results have proved happy in the extreme, and that, to-day, stenography in Germany counts not by hundreds, but

by thousands, and that not only amongst the professions styled liberal, but also in all avocations, in the army, in business, in which it is variously used ; and, in fine, by all those who appreciate the value of time." (Anderson, page 183.)

"To-day, Gabelsberger's system is taught with ardour in all the principal German States and Duchies. For the year 1874-75 the number of pupils in this stenography amounted to 16,449, belonging to 608 establishments, and receiving lessons from 779 professors. Besides the public pupils, there were 4,660 persons under private tutors of this same system. Altogether, there are 249 societies for the propagation of the Gabelsbergian short-hand, and at the head of these is the Society of Leipsic. Stolze's system, which first saw the light in 1841, is disseminated by no less than sixty associations in Germany, and five monthly journals" (page 187). "At the Colleges of Caracas and Vargas in Venezuela, short-hand is a regular branch of education. Blanco, the rector of the latter seminary, is the author of a system based on the English ones (256). In the staff of the short-hand writers to the Senate of Roumania there are eight of the first rank, who take each five-minute turns. In that of the Chamber of Deputies there are sixteen who relieve each other, in eight divisions, every ten minutes (288). Gabelsberger's short-hand system is taught in more than a hundred Hungarian colleges" (page 284).

Now, in the face of all these facts, the regular introduction of short-hand into Britain and into British possessions cannot be long delayed. Anderson tells us that short-hand has been introduced even into China and Japan. It will be invaluable if it obviates the necessity of writing the cumbrous alphabets of Asia. And if it is introduced into Asia instead of common writing, it can hardly fail to give a mighty impetus to literature. For during the last two thousand years the condition of short-hand has been the truest test and index of the state of literature. In the palmy days of Roman literature, it flourished to such an extent that emperors delighted to learn and to practise it. In the Middle Ages, when learning was at a very low ebb, short-hand was unknown ; and since 1588, when Bright published his system, about 3,422 different works on short-hand have been published in Europe.

COPYRIGHT LAWS VERY DEFECTIVE IN ENGLAND.

It is to be regretted that the present deplorable state of short-hand in England is very largely due to the shamefully defective state of the law regarding copyright. "A point which has not been touched on in connection with this topic, however, is this—that owing to the unsettled state of the law of copyright at present in our country, any man with an invention of a new system of short-hand would be slow to divulge it. It might be very difficult for such a person, even after publication, to establish his claim, at least to secure his profit in the invention. In that way, what has been above suggested as to the establishment of a university board for the consideration of the subject would be found, perhaps, to be highly serviceable" (Anderson, page 241). The grave imperfections attaching to Copyright and Patent Laws account for the backward condition of ten thousand things, short-hand among them. If these two laws were only sufficiently improved, many evils which are now most absurdly supposed to be beyond the pale of patents, such as the prevention of famines, of droughts, and of many other calamities, might either be mitigated or removed. But as long as the Patent and Copyright Laws are what they are—costly and incapable of affording protection—inventors and authors, in large numbers, will continue to withhold valuable secrets from the public. The greatest glory shed on the present Gladstonian administration of England is the honour it has gained of having very materially reformed and improved, under Mr. Chamberlain's skilful pilotage, the late iniquitous patent laws of England.

I confess that the system of short-hand now described has never been put to the test of experiment. But what is perfect in theory is very likely to be perfect in practice also. The 47th proposition of the First Book of Euclid has been, for many centuries, accepted as correct, without probably having been once proved experimentally. To prove it experimentally it would be necessary to cut out a square equal to the square of the hypotenuse, and squares equal to the squares of the sides containing the right angle. And then it would be necessary to cut the two smaller squares into such portions, as that, being placed on the large square, they would be seen to cover it exactly. This has probably never yet been done. Yet no one doubts the truth of the 47th proposition of the First Book of Euclid. Valuable secrets have probably been lost to mankind from their possessors being unable to affirm that what they had proved

correct in theory had been also repeatedly proved correct by experiment. Theoretically my system, though a perfect one, is also a very expensive one. But whatever its defects may be, as it seems to have some advantages, it is advisable that it should be published. The electric light was discovered a century before it was put to any practical use. The invention of the balloon has not, even yet, been put to any practical use, though it has been known for about a century. But although these two inventions have lain so long useless, is that any reason why their first discoverers and publishers should be deemed fools? Certainly not. So this discovery of mine may be proved utterly impracticable. Or it may lie useless for a long time. But inasmuch as there is some probability that it will, sooner or later, be found useful, it ought to be published. And its very defects, if it has any, may suggest to other and more intelligent inventors a method of short-hand that will really be the boon which men long for. Its expensiveness will probably prove on trial to be more imaginary than real. The best railways in the world are the most expensive. The underground railways of London are the greatest triumphs of engineering skill in the railway line. Yet they cost a million pounds per mile. Had any man in the year 1830 gravely affirmed that some London railways would in 1880 cost one million pounds sterling per mile, he should certainly have been deemed a lunatic and should have been perhaps treated as such.

By the system of short-hand which I have now described, I believe it will be possible to report what is not even now attempted—viz., the gestures of an orator.

In the following speech, which is a kind of epitome of the whole of this "Bitter Bitter Cry of Outcast Inventors," enough is said in the way of describing the gestures of the speaker to show what I mean.

"MR. THOMAS WAGHORN'S LECTURE ON THE WRONGS OF INVENTORS IN ENGLAND.

"Mr. Waghorn, on coming on to the platform, at once proceeded to the business of the evening and spoke as follows:—When I read the lives of English Inventors, I never can avoid recalling the terrible declaration of the great Whitefield. 'Men,' said Whitefield, 'are half beasts and half devils' (here the speaker brought his clenched fist from two feet above his head down rapidly and forcibly to two feet below his face); 'but we must beg the beast's pardon,

for a beast never becomes half so vile as man does when left alone fully to develop his bad passions.' (Here the speaker repeated previous gesture.) The cruelty with which inventors are treated in their later days is only equalled by the insane stupidity with which, in their early days, they are regarded as lunatics and fools, by both friends and foes. I always get so indignant when I think of this latter point, that I positively cannot trust myself to select an illustration from the lives of English Inventors, lest I should be stirred up to intemperate wrath. I shall therefore choose an illustration from French history, being careful, in reference to all the other points of my lecture, to choose illustrations from English history. Alison, in his magnificent History of Europe, narrates the following fact:— 'When Napoleon was paying his court to Josephine shortly before their marriage, neither of them having a carriage, they walked together to the notary Raguideau, to whom the latter communicated her design of marrying the young general. "You are a great fool," replied the cautious formalist, "and you will live to repent it. You are about to marry a man who has nothing but his cloak and his sword." Napoleon, who was waiting in the ante-chamber, unknown to Josephine, overheard these words, but never mentioned them to her till the morning of his coronation, eight years afterwards, when he sent for Raguideau. The astonished old man was brought into the presence of the Emperor, who immediately said to him, with a good-humoured smile, "What say you now, Raguideau? have I nothing but my cloak and my sword?" 'Now,' said the speaker (stamping on the ground vigorously with his right foot, and smiting the palm of his left hand with his clenched right hand), 'is not the heartless, calculating stupidity of that old worldly lawyer the evil by which English Inventors are crucified at the very outset of their career?' " &c.

Englishmen who attempt to criticise any new system of short-hand should exercise great caution, for several reasons, among which are the following. In the first place, Englishmen as a rule know next to nothing about short-hand, and under such circumstances they are only too apt to incur the condemnation of the proverb, "He that answereth a matter before he heareth it, it is folly and shame to him." In the second place, inventors of new systems of short-hand, while publishing as much regarding them as is necessary to give the public a general notion of their merits and defects, may yet see fit, for very good reasons, to keep secret, at first,

some very important details, which when published with the explanation of their first concealment will cover carping objectors with ridicule, shame, and confusion.

I recommend all who take an interest in short-hand to purchase Max Müller's *Selected Essays*, and study the essay which recommends Pitman's Reform in Spelling. That reform will almost certainly be an accomplished fact, some day. And the sooner the better. I recommend them also to purchase Anderson's *History of Short-hand*, which is, as far as I know, the best history yet published on that subject.

In conclusion, I may state that I might have adduced several far more cruel instances of persecution for professing to be an inventor, than the comparatively harmless one described here. But persecutors are oftentimes powerful, and as they are still alive, I have refrained, from prudential motives. The time may come, however, when it may be prudent both to speak and to write.

What then do inventors want? They want their cry to be heard and attended to. They belong to the persecuted, despised, hated, envied, and defrauded classes. The cruelties perpetrated on them recoil with terrific violence on the State. It is, surely, much better for the country that deserving inventors should become rich, than that purse-proud gambling speculators should lord it haughtily over their fellows as millionaires. It is surely much better for the country that capitalists should lend money to inventors in England, as Americans do in America, than that they should vainly try to fill bags full of holes, as they commonly do. Not long ago, Mr. McCoan, in his place in Parliament, asked the Under-Secretary of State for Foreign Affairs whether any diplomatic action had been taken by Her Majesty's Government to recover any part of the hopeless debt of *four hundred millions sterling* borrowed recently by South American Republics, chiefly—if not solely—from English money-lenders. A tidy little sum, that of four hundred millions sterling, to be thrown away on insolvent South American Republics! Had it been lent to inventors, perhaps a tenth of it would have been lost, and nine-tenths of it would have produced a golden harvest.

A grateful nation gave Marlborough and Wellington, and other victorious commanders, life pensions of £2,000 per annum. Liberality is almost always blest by God, and such liberality has doubtless produced many benefits to England. But without, for a moment, wishing to diminish the reward

due to those who have hazarded their lives in defence of their country, it is abundantly evident that if England had been either just or wise, she would have given greater pensions to the inventors of the steam-engine, the electric telegraph, the paddle-wheel, the screw-propeller, and the sewing machine, as well as an exceedingly magnificent pension to Thomas Waghorn, the true pioneer of the Suez Canal.

Since the commencement of the century (as the Peace Society with crushing logic has conclusively shown), of every pound raised by taxation 16s. 3½d. has been spent for war or war debts, and only 3s. 8½d. for civil government. This shows a shameful and disgraceful prostitution of public money to the pampering of the cruel arts of war, and a still more reprehensible starving of the useful arts of peace. Nothing tends to nourish Socialism, Nihilism, and Communism so vigorously as such conduct.

America is rapidly acquiring the first position in the world. This is largely owing to the extraordinary encouragement which she gives to inventors. Proofs of this might be afforded to an enormous extent. But I shall mention only one—a very important one—which has already been quoted :—" On the 11th April, 1884, the Legislature of the State of New York passed the following Resolution :—

" *Whereas* The incentives and rewards given to Inventors by the Constitution of the United States, and the laws of Congress passed thereunder, have done more, perhaps, than any one cause to advance our whole country to the front rank in wealth, resources, and industries among all nations in the world " (and then follow the resolutions for the benefit of inventors). (*Scientific American*, April 26th, 1884.)

Unless England is determined to remain content to fall behind America in wealth, influence, and power, she had better bestir herself and become a very, very great deal kinder to inventors than she has hitherto been.

A friend has very obligingly sent me a Hindoostan newspaper, which, as far as I can learn, is one of the leading English papers in Hindoostan. It is called the *Englishman*. It bears date September 8th, 1884. It contains the following most suggestive letter :—

"THE PATENT ACT.

"To the Editor of the *Englishman*.

"Sir,—In reply to 'Nemo,' Statute 15 and 16 Vict., c. 83, sec. 26, and Sec. 5, Act 15, 1859, Indian Patent Act,

authorise the issue of patents, 'subject to any such conditions and restrictions' as the Government in either country 'may deem expedient.' In England the clause is taken to mean that the conditions and restrictions shall be in favour of the public. In India it is interpreted to mean that they shall be in favour of Government. Since the year 1870 the Indian Government, in granting patents, reserve to themselves the right of using them free of all charge for royalty. It is true they seldom do so without paying something, but they pay what they think proper, not what the patentee may consider he is entitled to. In England the matter of compensation is settled by three assessors, one appointed by Government, one by the patentee, and these two nominate a third. If not thus settled, however, the English Government can use any patent without the patentee's licence, and no injunction can be obtained against such use, but the patentee can sue for infringement, and recover his royalty. As a matter of course, any Government servant can take out a patent, but under the present procedure he is a shred worse off than one of the public, because the Government claims the sole use of all his members (legs, arms, and brains). It is hard to say which is the most inequitably dealt by, the patentee in, or the patentee out of, Government service in India.

"E. L. CANTWELL,

"Patent Agent."

"Calcutta, September 3rd, 1884."

The above speaks for itself. It shows how cruelly, how heartlessly, how wickedly, two of the best Governments in the world rob a most deserving section of their subjects of their rights; and how necessary, in consequence, it is for English inventors, all over the world, to agitate, and agitate, and agitate, until such crying wrongs—wrongs which injure the State quite as much as their immediate victims, are for ever removed.

If the British Government is desirous of encouraging inventors, it should at once create a new State appointment. It should appoint a State inventor, and give him a salary of—say the same as that enjoyed by the Archbishop of Canterbury—viz., £15,000 a year, on the condition that the net profits of his inventions are divided between the State and himself. This would doubtless be found to pay so well that the Government would soon wish to have a large num-

ber of State inventors, on account of the revenue derived from them.

This would not only be an act of justice to inventors, but it would also provide what is terribly wanted at present—a *legitimate* means by which men of education may acquire wealth. At present, almost every means of acquiring wealth in England is illegitimate. What is the making of money by speculating in shares but gambling? From Alison's History of Europe it can be most conclusively shown that one great reason why England lost her splendid American colonies, now called the United States, was because the generals of her armies, who dishonestly made a lot of money by the continuance of the war, prolonged it when they could easily have finished it victoriously for England. Now, the only wise way of preventing men from making money dishonestly, is by giving them every facility for making it honestly. That diabolical and loathsome abomination known as Mormonism, which may yet rend the United States in pieces by a worse war than the slave war, would never have been heard of, if sufficient encouragement had, during the past century, been given to the poor in Europe to marry. One of the best means of destroying an illegitimate state of things is to encourage the contrary legitimate condition.

A warning is, in this pamphlet, given to the British people against the continuance of their cruelty towards inventors. They had better take it, otherwise the consequences will most certainly be disastrous. There is nothing more senseless than to spurn and condemn a warning which is based on sound reason. In 1716 a terrific accident occurred at the Royal Cannon Foundry at Moorfields, in London. Some captured French guns were about to be melted down and recast. A short time previous to the tapping of the furnace, a Swiss-German officer named Schalch, who happened to be on a visit to London, and who took a great interest in everything relating to furnaces, visited the foundry. On looking at the moulds he saw that they were damp, and at once informed the superintendent of their dangerous condition. All experience proves that if molten metal is brought into contact with moisture, a terrific explosion is the consequence. In fact, it would seem from the few and imperfect data of such accidents preserved by history, that the force generated by molten metal, when it explodes after contact with water, is far more terrific than that generated by an explosion of gunpowder. It is sup-

posed, but not proved (simply because nothing but dust and wreckage remained to give evidence), that a large copper smelting factory was blown to pieces solely from one of the workmen spitting into a ladle of molten copper. This exploded apparently, and brought, perhaps, a large quantity of molten copper into contact with a tank of water, and the consequent explosion blew the whole factory and its inmates to pieces. What a suitable simile, by the way, is this fact of the consequences of ill-treating inventors! They are like molten copper at a white heat of fervent zeal, like Waghorn with his Suez Canal scheme, in promoting some inventive project;—and when they ask for help and pecuniary assistance, the envious metaphorically spit upon them, giving rise to an explosion of retribution, which in God's providence may perhaps ruin some branch of the prosperity of a whole kingdom.

To return, however, from this digression. Schalch was laughed at by the superintendent of the gun factory for his pains. His warning was completely disregarded. Next day the molten metal was run into damp moulds, and Moorfields Royal Cannon Foundry was blown to pieces, all within a certain distance of it sharing the same fate. The Government, now thoroughly frightened, made inquiries after Mr. Schalch, and entreated him to select a site for a new foundry farther from the town. He pitched upon the Warren at Woolwich, which has since blossomed into the vastest arsenal in Great Britain. The Government also immediately made Schalch the superintendent in room of the man who had spurned his warning, who, as far as can be ascertained, was blown to pieces in the explosion.

Now the above true fact is a correct simile of the consequences which arise from kingdoms neglecting the warnings which are, from time to time, uttered against the folly of their ill-using their inventors. This useful body of men do not resort to dynamite. Either through weakness, or in faith, they leave their case in the hands of Him to whom vengeance belongeth. And He does not fail to take it. On the contrary, as a punishment to the cruel, he blights the sources of their national wealth and strength, even as He did the hosts of Sennacherib around Jerusalem. I believe there are many sources of national wealth to which the words of Byron do most emphatically apply:—

“And the might of the Gentile uns mote by the sword
Hath melted like snow in the glance of the Lord.”

